

J. E. B. 17
CAMPANALOGIA:

OR THE

A R T
O F
R I N G I N G

Improved.

With plain and easie Rules to
guide the Practitioner in the
Ringing all kinds of *Changes*.

T O

Which is added, great variety of
NEW PEALS.

LONDON,

Printed by W. Godbid, for W. S. and are to
be sold by Langley Curtis in Goat-Court
on Ludgate-hill. 1677.



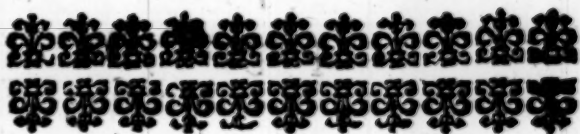
Harvard College Library
 Duplicate Money
 December 29, 1949

R I N G

17th St
 Ring

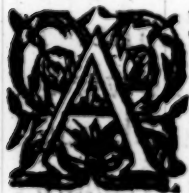
17th St

17th St



TO
THE HONOURED
AND TO
His much Esteemed FRIENDS,
The Members of the Society of
COLLEDG YOUTHS.

Gentlemen,



S your Society even
ab origine hath de-
servedly acquired an
eminency in many
respects above others
of this kind; so more especi-
ally

The Epistle

ally for the pregnancy of its Members in the composing of Peals. For when the Art of Cross-pricking lay enveloped in such obscurity, that it was thought impossible that double Changes on five bells could be made to extend farther than ten, and triple and double Changes on six farther than sixty; then it was that a worthy and knowing Member of your Society, to dissipate those mists of Ignorance, and to usher in the bright morn of Knowledg, prickt those much applauded Peals of *Grandfire* and *Grandfire Bob*; which for their excellency have for many years together
con-

Dedictory.

continued triumphant in practice
amidst all others whatsoever;
and which indeed have been a
great light in the production of
that great variety of new Peals
herein contained; the greatest
part of which being also the off-
spring of your Society, I there-
fore thought fit to usher them
into the world under the wings
of your Protection.

Gentlemen, as a member I held
my self obliged to add my Mite
to your full fraught Treasury of
Speculative and Practical Know-
ledg of this kind; though I con-
fess your acquisition on this ac-
count will be very mean, since
my want of ability sufficient to

The Epistle

undertake a thing of this nature, and also want of opportunity by converse with others to supply my own defects, have rendered the Book less acceptable than it might have been done by some more knowing head and acuter Pen. And although I am conscious that it meriteth not your acceptance; yet I assume the confidence to believe that you will favour it with a kind entertainment amongst you; and the rather, for that I know you are too judicious to sentence it without first casting into the ballance of your indifferent judgments some Grains of Allowance: The countenance
you

Dedictory.

you shew it will silence Detra-
ctors, and be Armour of proof
against the fools bolts which
may happen to be soon shot at
the Author, who is

Gentlemen,

*A constant Well-wisher to
the Prosperity (though an
unworthy member)
of your Society,*

F. S.

You know it will silence Deceit
 and be a monument of proof
 against the fools who
 may happen to be born that
 the Author, who is

ERRATA

Courteous Reader,

Some few faults have escaped the Press: as pag. 27
 line the 4th. for grateful read graceful. page 31.
 line the 19th. for imitating read imitating, with some
 others, which you are desired either candidly to amend, or
 hastily to pass over.



OF THE
 A R T
 O F
 Changes.



Hese clear dayes of Knowledge, that have ransackt the dark corners of most Arts and Sciences, and freed their hidden mysteries from the bonds of obscurity, have also registred this of *Ringing*, in the Catalogue of their Improvements; as well the Speculative as the Practick part, which of late years remain'd in *Embryo*, are now become perfect, and worthy the know-
 B ledge

ledge of the most ingenious. Although the Practick part of *Ring*ing is chiefly the subject of this Discourse, yet first I will speak something of the Art of *Changes*, its Invention being Mathematical, and produceth incredible effects, as hereafter will appear. But first, I will premise a word or two, to shew what the nature of those *Changes* are. Some certain number of things are presupposed to be changed or varied; as 2. 3. 4. 5. 6. or any greater number whatsoever; then the number of things to be so varied must have the like number of fixed places assigned them. As if five men were sitting upon five stools in a row; the stools are supposed to be fixed places for the five men, but the men by consent may move or change to each others places at pleasure, yet still sitting in a row as at first: now this Art directs how, and in what order those five men may change places with each other, whereby they may sit sixscore times in a row, and not twice alike. And likewise a *Peal* of five Bells, being raised up to a fit compass for ringing of *Changes*, are there supposed to have five fixed places, which time assigns to their notes or strokes; yet the notes of the Bells may change into each others places at pleasure: now this Art also directs the manner and method of changing

ing the five notes in such sort, that they may strike sixscore times round, and not twice alike.

The numbers of *Changes* are thus to be discovered. *Two* must first be admitted to be varied two wayes; then to find out the Changes in *three*, the Changes on two must be multiplied by three, and the product will be six, which are the compleat number of Changes on three.

Those six Changes being multiplied by four, will produce 24, which are the compleat number of Changes on four. The 24 Changes on four, being multiplied by five, will produce 120, which are the compleat number of Changes on five. And in like manner the 120, being multiplied by six, will produce 720, which are the compleat number on six. The 720, being multiplied by seven, will produce 5040, which are the number of Changes on seven. The 5040, being multiplied by eight, will produce 40320, which are the number of Changes on eight. Those Changes on eight, being multiplied by nine, will produce 362880, which are the number of Changes on nine. Those Changes on nine, being multiplied by ten, will produce 3628800, which are the number on ten. Those on ten, being multiplied

by eleven, will produce 39916800, which are the number on eleven. Those also being multiplied by twelve, will produce 479001600, which are the compleat number of Changes on twelve. And if twelve men should attempt to ring all those Changes on twelve Bells, they could not effect it in less than seventy five years, twelve Lunar Months, one week, and three days, notwithstanding they ring without intermission, and after the proportion of 720 Changes every hour. Or if one man should attempt to prick them down upon Paper, he could not effect it in less than the aforesaid space. And 1440 being prickt in a sheet, they would take up six hundred sixty five Reams of Paper, and upwards, reckoning five hundred Sheets to a Ream; which Paper at five shillings the Ream, would cost one hundred sixty six Pounds five Shillings.

The reason of the aforesaid Multiplication, by which the numbers of Changes are discovered, and also that those Products are the true numbers of Changes, will plainly and manifestly appear in these following Demonstrations.

But first, *two* must be admitted to be varied two ways, thus. ———— ———— ———— ————

And then consequently, *three* will

1	2
2	1
make	

make three times as many Changes as *two*; for there are three times two figures to be produced out of three, and not twice two the same figures, which are to be produced by casting away each of the three figures one after another. First, cast away 3, and 1.2 will remain; cast away 2, and 1.3 will remain; cast away 1, and 2.3 will remain. So that here are three times two figures produced out of the three, and not twice two the same figures, as 12. 13. 23. each two may be varied two ways, as before: then to the changes which each two makes add the third figure which is wanting; as to the two changes made by 1.2 add the 3, to the changes on 1.3 add the 2, and to the changes on 2.3 add the 1, and the three figures will stand six times together, and not twice alike, as here appeareth.

123
213
132
312
231
321

Four will make four times as many changes as *three*. For there are four times three figures to be had out of four, and not twice three the same figures, which are to be produced by casting away each of the four figures by turns. First cast away 4, and 123 will remain; cast away 3, and 124 will remain; cast away 2, and 134

1234
2134
1324
3124
2314
3214
1243
2143
1423
4123

will remain; and lastly, casting away 1, and 234 will remain; so that here is 123, 124, 134, 234, and not twice three the same figures. Now each three may be varied six ways, according to the preceding Example. Then to the six changes which each three makes, add the fourth figure which is wanting; as to the six changes on 123 add the 4, to the six changes on 124 add the 3, to the six changes on 134 add the 2, and to the six changes on 234 add the 1, which renders the changes compleat; for then the four figures stand twenty four times together, and not twice alike, as here appears.

2413
<u>4213</u>
1342
<u>3142</u>
1432
<u>4132</u>
3412
<u>4312</u>
2341
<u>3241</u>
2431
<u>4231</u>
3421
<u>4321</u>

Five will make fivetimes as many changes as *four*; for there are five times four figures to be had out of five, and not twice four the same figures, which are to be produced as before, by casting away each of the five figures by turns. Cast away 5, and 1234 will remain; cast away 4, and 1235 will remain; cast away 3, and 1245 will remain; cast away 2, and 1345 will remain; cast away 1, and 2345 will remain. So that here are five times four figures produced, and not twice four the same figures. Now each four maybe varied

tween-

twenty four ways, as in the preceding example; then to the twenty four changes which each four makes, add the fifth figure which is wanting: as to the twenty four changes on 1234, add the 5; to the twenty four changes on 1235, add the 4. to the changes on 1245, add 3. to the changes on 1345, add 2. and to the changes on 2345, add 1. which renders the changes compleat, for then the five figures stand fixscore times together, and not twice alike.

12345	12354	12453	13452	23451
21345	21354	21453	31452	32451
13245	13254	14253	14352	24351
31245	31254	41253	41352	42351
23145	23154	24153	34152	34251
32145	32154	42153	43152	43251
12435	12534	12543	13542	23541
21435	21534	21543	31542	32541
14235	15234	15243	15342	25341
41235	51234	51243	51342	52341
24135	25134	25143	35142	35241
42135	52134	52143	53142	53241
13425	13524	14523	14532	24531
31425	31524	41523	41532	42531
14325	15324	15423	15432	25431
41325	51324	51423	51432	52431
34125	35124	45123	45132	45231
43125	53124	54123	54132	54231
23415	23514	24513	34512	34521
32415	32514	42513	43512	43521
24315	25314	25413	35412	35421
42315	52314	52413	53412	53421
34215	35214	45213	45312	45321
43215	53214	54213	54312	54321

And in this manner the compleat numbers of changes on six, seven, eight, nine, ten, eleven, twelve, &c. may also be demonstrated.

The numbers of changes will also plainly appear by the methods, whereby they are commonly prickt and rung. Now the nature of these methods is such, that the changes on one number comprehends the changes on all lesser numbers, and that so regularly, that the compleat number of changes on each lesser number are made in a most exact method within the greater; insomuch that a compleat Peal of changes on one number seemeth to be formed by uniting of the compleat Peals on all lesser numbers into one entire body; which will manifestly appear in the 479001600 changes on twelve: for that Peal comprehends the 39916800 changes on eleven; these likewise comprehend the 3628800 changes on ten, these changes on ten comprehend the 362880 on nine, these on nine comprehend the 40320 on eight, these on eight comprehend the 5040 on seven, these likewise the 720 on six, the 720 also comprehend the 120 on five, the 120 comprehend the 24 changes on four, these also comprehend the six changes on three, and the six comprehend the two changes on two. Each of these
Peals

Peals (*viz.*) on eleven, ten, nine, eight, seven, six, five, four, three, and two, being made in a most exact method within the changes on twelve. For Example, *two* are first admitted to be varied two ways, thus —

Now the figure 3 being hunted through each of those two changes, will produce the six changes on three. The term

Hunt, is given to a Bell to express its motion in Ringing, which in figures is after this manner. It must lie behind, betwixt, and before the two figures: first behind them thus, 1 2 3; then betwixt them, thus, 1 3 2; now before them, thus, 3 1 2: this is called a *hunting* motion, and here it has hunted through the first change of the two, wherein it made three variations, as appears in the figures, standing thus in order. —

Now it must hunt through the other change, which is 2 1, in the same manner as before; that is, first it must lie before, then betwixt the two figures, then behind them, thus, 3 2 1, 2 3 1, 2 1 3. Here it has hunted through again, wherein it made three more variations; which three being set directly under the former, the six variations will then plainly appear, as in these figures: where the three figures stand six times together, and not twice alike.

Now

Now the figure 4 being in like manner hunted through each of those six changes, will produce the 24 changes on four. First, therefore it must hunt through the first, which is 123, letter (a); then through the second change of the six, which is 132, letter (b); then through the third, which is 312, letter (c), and so it being hunted through the rest of the changes likewise, will produce the twenty four changes on four.

(a) | 1234
| 1243
| 1423
| 4123

(b) | 4132
| 1432
| 1342
| 1324

(c) | 3124
| 3142
| 3412
| 4312

The figure 5 being hunted through each of those twenty four changes, will produce the 120 changes on five. First therefore it must hunt through the first, which is 1234, letter (a); then through the second, which is 1243, letter (b); then also through the third, which is 1423, letter (c). In which manner it being hunted through the rest of the twenty four changes, will produce the 120 on five. And then the figure 6 being hunted through each of those sixscore

(a) | 12345
| 12354
| 12534
| 15234
| 51234

(b) | 51243
| 15243
| 12543
| 12453
| 12435

(c) | 14235
| 14253
| 14523
| 15423
| 51423

chan-

changes will produce the 720 changes on six. And the figure 7 being hunted through each of those 720 changes, will produce the 5040. In which manner also the eighth, ninth, tenth, eleventh, and twelfth, being successively hunted through each Peal in the aforesaid order, will at length produce the compleat number of changes on twelve. Wherein 'tis observable, that all the figures, except two, have a hunting motion; which two may properly be term'd the Center, about which the rest do circulate. By these methods it is evident, that every hunting figure hath a certain number of figures assigned, through which tis constantly to hunt: as in the aforesaid Example on twelve, where the 1.2 are assigned for the figure 3 to hunt through, as appears in the six changes before. And in like manner, 123 are assigned for the figure 4 to hunt through; 1234 are assigned for the figure 5 to hunt through; 12345 for 6 to hunt through, &c. Now the figure 3 hunts as many times through the 1.2. as those two make changes, that is, two times wherein it makes twice three changes, that is, six, as before appeareth. The figure 4 hunts as many times through the 123, as those three figures make changes, that is, six times; wherein it makes six times four changes, which

which amounts to twenty four. The figure 5 hunteth as many times through the 1234, as those four figures make changes, that is, twenty four times; wherein it makes twenty four times five changes, which amounts to 120. The figure 6 hunts as many times through the 12345, as those five make changes, that is 120 times, wherein it maketh 120 times six changes, which amounts to 720. And in like manner the figure 7 hunts 720 times through 123456, wherein it maketh 720 times seven changes, which amounts to 5040. The eighth hunteth 5040 times through 1234567, wherein it makes 40320 changes. The 9th hunteth 40320 times through 12345678, wherein it makes 362880 changes. The tenth hunteth 362880 times through 123456789, wherein it makes 3628800. The eleventh hunteth 3628800 times through 1.2.3.4.5.6.7.8.9.10. wherein it makes 39916800. And lastly, the twelfth hunteth 39916800 times through 1.2.3.4.5.6.7.8.9.10.11. wherein it makes 39916800 times twelve changes, which amounts to 479001600, being the compleat number on twelve. By which 'tis evident, that every hunting figure hunts as many times through its assigned number of figures, as those figures are capable of making changes, which in
short

short comprehends the summe and substance of this method, which is universal from two, to all greater numbers whatsoever.

If we consider the multitude of different words, wherewith we express our selves in Speech, it may be thought almost impossible that such numbers should arise out of twenty four Letters; yet this Art of variation will produce much more incredible effects. To give an instance thereof, I will shew the numbers of every quantity of Letters from two to twelve, that may be produced out of the Alphabet. The generality of Words consisting of these quantities, (*viz.*) two letters, three letters, four, five, six, seven, eight, nine, ten, eleven, and twelve letters. There are 10626 times four letters to be produced out of the twenty four letters of the Alphabet, and not twice four all the same Letters. There are likewise 42504 times five letters, 134596 times six letters, 346104 times seven, 735471 times eight, 1307504 times nine, 1961256 times ten, 2496144 times eleven, and 2704156 times twelve. Now each quantity being varied by the rules of this Art, will produce incredible numbers. First the 10626 times four letters, being multiplied by 24, which are the number of ways to vary each four letters, will produce

duce 255024 that is to say, four letters may be produced out of the Alphabet to stand together after this manner (*abcd*) two hundred fifty five thousand and twenty four times, and not twice alike. And in like manner, the 42504 times five Letters, being multiplied by 120, which are the number of ways to vary each five, will produce 5100480. The 134596 times six letters, being also multiplied by 720, will produce 96909120. The 346104, being multiplied by 5040, will produce 1564364160. The 735471, being multiplied by 40320, will produce 29554290720. The 1307504, being multiplied by 362880, will produce 474467051520. The 1961256, being multiplied by 3628800, will produce 7117005772800. The 2446144, being multiplied by 39916800, will produce 99728079819200. And lastly, the 2704156 time twelve letters, being multiplied by 479001600, will produce 1295295050649600, which products being all added together, as also 12696 which are the numbers consisting of two and three letters, the whole will amount to 1402645824276320, wherein there are not two alike, nor two letters of one sort in any one of them; which being written or printed on large Paper in *folio*, allowing

lowing 5000 to a sheet, they would take up 561058329 Reams of Paper and upwards, reckoning 500 sheets to a Ream: which Paper all the Houses in the City and Liberties of *London* would not contain; and in quantity doubtless infinitely exceeds all the Books that ever were printed in the world, reckoning only one of each Impression. And at the rate of five shillings the Ream, the Paper would cost 140564582 Pounds sterling; which is above four times as much as the yearly Rent of all the Lands and Houses in *England* amounts to. And all the people both young and old in the City and Suburbs of *London* (admitting they are five hundred thousand) could not speak the like numbers of words under forty years and upwards, each of them speaking 15000 every hour, and twelve hours every day. These prodigious numbers are the more to be admired, considering that the greatest number of letters in any of them, exceeds not twelve, neither are two letters of one sort in any one of them: but by producing and varying all the greater quantities, and placing two or more letters of one sort, or two of one sort and two of another, with all variety of the like nature that commonly happens in words, the numbers arising thereby would infinitely exceed

exceed the former. And if all the numbers of every quantity of letters from one to twenty four, together with all the variety as aforesaid, were methodically drawn out and varied according to the rules of this Art; which might easily be performed in respect of the plain and practical method of doing it; but the infinite numbers of them would not permit a Million of men to effect it in some thousands of years: it would be evident, that there is no word or syllable in any language or speech in the world, which can be express'd with the character of our *Alphabet*, but might be found *literatim* and entire therein; and more by many thousands of Millions than can be pronounced, or that ever were yet made use of in any language.

I will here give one instance of another kind, shewing the admirable effects of this Art, and so conclude. A man having twenty Horses, contracts with a Brick-maker to give him one hundred pound Sterling; conditionally that the Brick-maker will deliver him as many Loads of Bricks; as there are several Teams of six Horses to be produced out of the aforesaid twenty to fetch them, and not one Team or Sett of six Horses to fetch two Loads. The Brick-maker might be thought to have made a very advantageous bargain,

bargain, but the contrary will appear. For there are thirty eight thousand seven hundred and sixty several Teams of six Horses, to be produced out of twenty, and not twice six the same Horses; then the Brick-maker must deliver as many Loads as there are Teams, and each Load consisting of five hundred Bricks, the whole would amount to 19380000, which being bought for one hundred pounds as aforesaid, would not cost above five Farthings a thousand; and at the rate of thirteen shillings and four pence the thousand, they amount to twelve thousand nine hundred and twenty pounds Sterling. But should a contract be made with the Brick-maker to deliver as many Loads of Bricks, as there are Teams of six Horses in each, to be produced out of the aforesaid twenty, which shall stand in the Cart in a differing manner; that is to say, although there may be the same Horses in several Teams, yet their places shall be so changed, that they shall not stand twice alike in any two Teams. On this account the Brick-maker must deliver seven hundred and twenty times as many as before; for there are 38760 several Teams as before I have shewed: then each Team may be placed 720 ways in the Cart, and not twice alike, which is to be done according

C

ding

ding to the methods whereby the 720 changes on six Bells are rung. So that 38760, which are the number of Teams, multiplied by 720, which are the number of ways to vary the six Horses in each Team, the product will be 27907200, which are the compleat number of Teams; and every Team carrying one Load, consisting of five hundred Bricks, the Whole will amount to 13953600000 Bricks. And after the proportion of a hundred and fifty thousand of Bricks to a House, they would build ninety three thousand and twenty four Houses; which are above six times as many as the late dreadful fire in *London* consumed. And at the rate of thirteen shillings and four pence the thousand, they are worth 6976800 pounds Sterling, which is at least four hundred Waggon-loads of money, as much as five Horses can ordinarily draw.

AN



AN
INTRODUCTION
To the Practice of
RINGING.

AS the original design of casting Peals of Bells was in order to make pleasant Musick thereon ; so the Notes in every Peal are formed apt for that end and purpose , every Peal of Bells being tun'd according to the principles of Musick ; for in a Peal of six Bells are the six plain Song-Notes, whereupon all Musick consists, namely, *la sol fa mi re ut*. But in regard that in ringing of them the Notes cannot be had at command, as the Notes of other Instruments may ; therefore, as the Practitioners in ancient time found some necessity to cause all the Notes to strike successively after one another, so likewise they thought fit in ringing them to place the Notes in this following order. The least note to lead or strike first, then the Note which is the next degree

deeper or flatter, and so the rest of the notes to strike after each other according to their degrees, the flattest striking last; in which order the notes were successively reiterated both at fore-stroke and back-stroke, from the beginning to the end of each Peal. And at this day the same order is also observed in raising, ceasing, and ringing them at a low compass; wherein each note being confin'd to strike in a certain place, therefore had they their terms of First, Second, Third, Fourth, Fifth, &c. given them, to denote their order and places of striking; from whence also the Bells derive those terms of distinction by which they are now known. Although the ringing of a Peal of Bells in the aforesaid order, (which is commonly term'd *Round-ringing*) is in it self Musical; yet the Notes may be so placed in ringing, that their Musick may be rendred much more pleasant: for in Musick there are Concords, which indeed may be term'd the very life and soul of it, that renders all Musick exceeding pleasant: the principal are Thirds, Fifths, and Eights; Thirds are 1 3. 2 4. and such like: Fifths are 1 5. 2 6. &c. Eights are 1 8. 2 9. 3 10. &c. each Concord consisting of two notes. They may well be termed Concords, in respect of their agreement
and

and harmony ; for the two notes (as if it were by mutual consent) being struck together at one instant, or else immediately after one another , affords delightful melody to the ear ; in which respect, a peal of five Bells are capable of making better Musick than a peal of four ; six better than five ; and more especially will ten or twelve make more excellent Musick than any lesser numbers can possibly do, there being greater variety of Concords therein, and especially of Eights. For this Musical end were changes on Bells first practised, *changes* being nothing else but a moving and placing of the Notes in ringing, whereby variety of pleasant Musick is made ; and as the manner of moving the notes, is, for two notes to change places with each other, therefore are they called *Changes*. The methods of changes being somewhat intricate, I have therefore penn'd the following Treatise as a Clue to guide the Practitioner through the Labirinth of them, wherein I have made use of figures to represent the notes of Bells, the manner thus. In a peal of five Bells there are five several notes, which with figures are thus exprest, 1 2 3 4 5 : the figure 1 represents the least or sharpest note, which is term'd the First, because its place in round ringing is to lead ; this note is most

commonly called the *Treble*. The figure 2 represents the note which is the next degree deeper or flatter, and is term'd the Second, because it strikes in the second place. And in like manner 3 represents the note of the third Bell, 4 the note of the fourth Bell, and 5 the note of the Fifth or Tennon. In which manner, the figures in all the following methods do likewise represent the notes of Bells.

Since the ringing of changes requires the peal of Bells, on which the changes are to be rung, to be first raised up to a set Pull, which compass is most proper for the ringing of them; therefore the Learners first practice must be to raise a Bell true in peal, to ring it at a low compass, and also to cease it true in peal, wherein consists the chief grounds of this Art, which depends on the Ear, and therefore much judgment is required therein. And to speak the truth, most practitioners are in these days somewhat deficient herein; the ringing of changes having generally diverted the Learners fancy from the practice of *raising, round-ringing, and ceasing*, by which means we have in a manner lost one Excellency in the pursuit of another. Therefore I could wish that the Practitioners of this Art would set a greater esteem on true Ring-

Ringing in general, since the only excellency
 as well in the ringing of Changes as Rounds,
 depends thereon: the keeping of time being
 as essential to render all kinds of ringing
 pleasant to the ear, as 'tis to render any other
 kind of Musick; therefore the practitioner
 ought to have a Musical eare, and to have
 some judgment in beating time, without
 which he can never ring his Bell true in its
 place. A prospect of true ringing at any cer-
 tain compass under the Sett, may thus be ta-
 ken; for Instance, in ringing a peal of 5 Bells;
 from the fore-stroke of every note to the next
 fore-stroke of the same note, there ought to be
 eleven *punctums* or Beats of time, which
 are all supposed to stand at *Æquidistances*:
 now in ten of these *punctums*, the five notes
 ought exactly to strike at the fore-stroke and
 back-stroke, and the eleventh stands as a Cy-
 pher to guide the Treble-note at fore-stroke
 to a double proportion of time from the Ten-
 nor-note at back-stroke: which blank *pun-*
ctum must also be beaten in the same place by
 every note; to render its fore-stroke answe-
 rable to that of the Treble. For example;
 the third note having struck at fore-stroke,
 it must beat eleven *punctums* of equidistance
 unto its striking there again. The first *pun-*
ctum is that of the 4th note, the second 5, the

third 1, the fourth 2, the fifth 3, the sixth 4, the seventh 5, the eighth 0, the ninth 1, the tenth 2, the eleventh its own place of striking again at fore-stroke. These *punctums* or Beats of time, must be proportioned either wider or closer, according to the compass of the Treble: therefore first the Treble must fix its compass certain and true at fore-stroke, which ought to be proportionate to what the number of the notes, and compass of the peal of Bells, may according to judgment permit; and then from one fore-stroke of it to the next, if there are five notes; there ought to be eleven *punctums* of equidistance assigned, wherein the notes should exactly strike (except the blank) as before. From hence 'tis, that the most judicious Ringer ought to be put to the Treble; for that bell cannot possibly be rung true by any other means than by beating of its own time; and although the exactness of true ringing requires the like in every note, when once the compass is fixed, yet the leading note being rung true, may be a guide to the rest of the notes, which may tolerably take their measures of time from the Treble-note: but for every note to take its measure of time solely from the next preceding note, must needs be very erroneous; for thereby
they

they implicitly lead one another out of the way. Or else in the ringiug of five bells, from the fore-stroke of every note to the next fore-stroke of the same note, there may be one and twenty *punctums* or beats of time assigned, to stand at equidistances; and the five notes, as they follow one another, at the fore-stroke and back-stroke to strike in every second *punctum*, except the Treble-note at fore-stroke, which must strike in the third *punctum* from the Tenor at back-stroke; so that then there will be two of those spaces betwixt every note, and three betwixt the note of the Tenor at back-stroke and the note of the Treble at fore-stroke, which possibly by some may be held a better compass than the former: but *quot homines tot sententie*. Every Practitioner, that has judgment to beat his own time, has the advantage of ringing his bell true, whilst the rest of the notes commit faults: for the compass being once fixed, as many bells as do either rise or fall from thence commit errors.

The truest way of raising a peal of bells according to the best of modern practice, is, as quick as may be; every Ringer taking assistance to raise his bell, according as the going of it requires. In raising of them, the lesser bells, as the Treble &c. ought at the first pull

pull to be swayed very deep, and held down in the sway by strength of armes as much as may be, to delay the time of their first striking, by which means the bigger bells, which carry a large compass, may have space to come in; and the raising of the smaller bells to be continued with a strong pull, giving them scope over head (for the aforesaid reason) untill they come up Frame-high, or thereabouts, and then the pull to be slacken'd, and the bells leisurely to be raised to the intended height or pitch. The bigger bells of the peal, as the Tenor &c. must in their first raising be checkt or pinch'd over head, by which means the notes of all the bells may be made to strike round in their due place and order from the beginning; and observe, that at the first pull all the bells must follow one another as close as may be. A peal of bells may thus be ceased: the falling of the bells from a Sett-pull must gradually be done, by checking them only at Sally, until the low compass renders the Sally useless; and when they are ceased so low, that they scarce strike at back-stroke for want of compass: then he that rings the Treble, may give notice (by stamping on the ground) that the next time the bells come to strike at the fore-stroke, they may be checkt down so low as to cease
their

their striking at the back-stroke, yet their striking round at the fore-stroke may be continued, until they are brought into a chime, which is a grateful conclusion of a peal.

In raising of a peal of bells, all the notes ought to strike round at one pull: but mistake me not, I do not mean at the first pull; for at small bells 'tis usual to sway them all round at the first pull without striking; at the second pull to strike them at the fore-stroke, and at the third pull at back-stroke. In raising of a peal of more weighty bells, 'tis usual to strike them double at the fourth pull, because the extraordinary weight and large compass of the hind-bells permits it not to be done sooner. In the first raising of a peal of bells, one bell ought not to strike before the rest, or to miss striking when the rest go round: neither ought any bell in ceasing to strike after the rest, or to leave striking before the rest; all which, according to the strictness of true ringing, are accounted great faults.

The peal of bells on which the changes are to be rung, must first be raised up to a Sett-pull, which compass is most proper for the ringing of changes; for then the notes of the bells may be had at command. Therefore before the young Practitioner can be capable of ringing changes, he must be extraordinary well

well skill'd in the managing of a bell at a Sett-pull, which is absolutely requisite, for this reason: In the ringing of changes, his mind will be so busied and wholly taken up with the consideration of the course and method of them, and his eye continually wandring about to direct his pull in the following of the other bells; that unless he has extraordinary skill in the managing of his own bell, and can set it in a manner hood-winkt, he will be apt either to drop or overturn it; or else on the other hand, for want of skill, his eye and mind will be so fixed on his own rope and bell to guide the managing of it, that he cannot at the same time mind the course of the changes, and then no wonder if he is in a wood, which consequently follows; and indeed hence partly 'tis, that the Learners in their first practice do oftentimes toil and moil themselves to so little purpose. Therefore 'tis not enough that the young Practitioner can set a bell it may be half a score times together, when 'tis an even wager that he either drops or overturns it in those ten pulls: but he must be so perfectly skill'd, as that he might adventure to lay ten to one, that he can set it thirty or forty times together, both fore-stroke and back-stroke, without dropping or overturning it, and without
looking

looking directly either on his hands or rope whilst he sets it. Therefore in his practice of setting a bell, he may cast his eye about on the other bell-ropes whilst he manageth his bell, whereby he may accustom himself to manage it as the ringing of changes requires.

The ringing of changes is performed, partly by the ear, and partly by the eye; the ear informs when to make a change, the eye directs the pull in the making of it; but then again the ear guides the striking of the note true in its place according to time. So that the ear and eye have each of them its proper object in the ringing of changes, and therefore ought at the same time to be absolutely free from all others whatsoever, the notes of the bells being the object of the ear, and the bell-ropes the object of the eye. Now these two Senses in the time of ringing do each of them thus perform its office. First, the ear, as a Sentinel, discovers the near approaching change, and also the place wherein his note lies, that is, whether before or behind the note wherewith 'tis to make a change, and gives present information to the eye, to perform its part accordingly in the making of it; but then again the eye refers it to the ear, to place the note true in striking. But questionless (by the bye) the truest ringing of chan-

changes is to be performed only by the ear; but then the Practitioners must be capable to judge of time, and to beat it true, which must be the only direction to guide their pull; and then it must be performed at a peal of bells that may be managed with ease: and being so fitted in all respects, the changes may doubtless be rung more true, with greater pleasure to the Practitioners, and much more free from mistakes and forgets, only by the ear, than by making use of the eye to direct their pull. But in regard that either the ill going of the bells, or want of fit accomplishments in the practitioners, may render it unfit for common practice; therefore the surest way is to ring both by the eye and ear, as I said before. Now to render the eye and ear rightly useful in the ringing of changes, five things ought by the young Practitioner to be well understood. First, he must be able to distinguish the notes of a peal of bells, and to know one from another in the time of ringing. Secondly, he must apprehend the places of the notes. Thirdly, the precedence of notes. Fourthly, the manner of making a change in ringing. Fifthly, a general prospect of the manner of putting the four preceding notions into practice.

Observation 1. The Learner must be able to

to distinguish the notes of a peal of bells one from another, and to know them afunder; as the Treble-note from the Second, the Second from the Third, &c. which, tis true, may readily be done in round ringing, because each note may be known by the place wherein it constantly strikes; but in ringing of changes it is more difficult. For admitting that six bells should strike in this order, 5.3.6.1.4.2. it might puzzle an unskilful ear to judg which is the Treble, or which the Second note, especially whilst any other note strikes betwixt them: and the like difficulty might happen in distinguishing the rest of the notes, as the 2^d from the 3^d, &c. To remove this difficulty, he must endeavour to acquire some skill in tuning the notes of a peal of bells with his voice, which he may do by imitating the notes of the bells when he hears them ring; or else any person that has skill in singing, will presently direct him therein, and also how to take the true pitch of any notes with his voice, which will be the only means to distinguish them afunder.

Observ. 2^d. The Learner must rightly apprehend the places of the notes, which I think cannot better be done than by this means. Considering that the notes of a peal of bells do all strike one after another at the fore-stroke;

stroke, and the like at back-stroke; it might be requisite for him to imagine, that the notes in their striking do lie in a direct line, that is, in a row at the fore-stroke, and the like again at back-stroke; for then the places of the notes will much resemble the places of the figures wherewith the changes are prickt: for as the figures of every change do all stand in a row; so likewise the notes of the bells, being imagined to strike in the like row, he may the more readily apprehend the places of the notes, and consequently of changing them. For the practick part of this Art, is performed by means of imaginary, not real notions; which will thus manifestly appear. This is the platform of a Frame, wherein five bells may be supposed to hang in a Steeple, the figures therein representing the places wherein the five bells hang. Now in the sixscore changes on five bells, we will suppose the Treble to be the whole Hunt, and to hunt up first over the Second, then over the Third, &c. Now the Treble cannot really move out of the place wherein it hangs; but by delaying its striking untill the Second Bell has struck, it may by that means strike next after it; and again, by delaying its striking untill the Third has struck,

1	2
3	4 5

struck; it may also strike next after that, this being the true manner of the changes; by which 'tis evident, that the bells have neither really such places nor motion as is pretended, but is meerly imaginary, and was at first feigned only as a Guide to direct the Practitioner's apprehension in the ringing of them. So that although the art of changes is in it self a real thing, yet the notions by which they are reduced to practice on bells, are not so. For which reason, the several practitioners of this Art, before they can become expert, are fain to form in their minds imaginary notions to guide them; some after one manner, some perhaps after another, according to their several fancies; yet all tending to render the methods of changes practicable on bells; and having once form'd in their minds such imaginary helps, they become expert in short time: and then no sooner do they understand the methods of changes prickt with figures, which they commonly discover at first view; but they are presently capable of ringing them readily on bells, which experience daily testifies. And hence it is, that oftentimes the Learners, although they perfectly understand the methods of changes prickt, and also can perfectly manage a Bell; yet for want of a right ap-

prehension of the nature of changing the notes, which of themselves it may be they cannot soon attain, are therefore much puzzled in their first practice of ringing changes. Therefore as a guide, the Learner must first form in his mind a fit representation of the places of the notes; which I think cannot better be done, than by imagining each note to be a figure; as the Treble-note to be the figure 1, the second note the figure 2, the third note the figure 3, and the like of the rest. Then whensoever he hears a peal of bells ring, let him by strength of imagination conceit, that each note bears the shape of a figure; that is, at the same instant of time that the note strikes, he may imagine that it leaves the impressi^on of the figure behind it, and that with the eye of his imagination he perfectly sees it: and likewise as the notes of the bells do all strike after one another at the fore-stroke, so he may imagine that they lie in a row in the shape of figures; and the like again at back-stroke. For instance: suppose that five Muskets were charged with five bullets, and that each bullet bears the shape of a figure; one Gun to be charged with the figure 1, another with the figure 2, and the other three Guns with these three figures, 3. 4. 5. Then supposing a straight
line

line were drawn upon the wall, thus ——— and that the five Muskets were by five men levell'd against the line, which is to be the mark for them to shoot at ; the figure 1 to be first shot off, then the figure 2, and so the rest in order immediately after one another : now at the same instant of time that the Guns are heard to go off, the five figures would ap-

pear in a row upon



the wall, thus. So in like manner when he hears a peal of five bells strike after one another at the fore-stroke, and again at back-stroke, he may imagine that at the very instant of their striking their notes appear to his apprehension in the shape of the five figures, and that they strike in a row, thus, 1 2 3 4 5, as if each Bell were a Gun, and had shot out its note in the shape of a figure. There being necessity that the young Practitioner must either imagine each note to be a real figure, or else a representative : for as the ear is to be his guide to direct when to make each change ; so a right apprehension of the motion and places of the notes, must be a means to guide his ear. Now in regard that the changes are first prick't with figures, from whence the notes of the bells derive

their course; therefore if in ringing he imagine each note to be a real figure, then the same knowledge that guides the pricking, guides also as readily the ringing of them, for then the note of his bell is supposed to have the same course with that of a real figure. But if he imagines that each note is not a real, but a representative of a figure; then consequently it must only have the like, and not the same course: by which means, whilst he is ringing of changes, his mind must have frequent recourse to his Pocket, that is, to the changes there prickt; from whence he must continually fetch instructions to direct the course of his Bell, which is oftentimes the case of the Learner: his thoughts in the time of ringing being commonly upon the figures that are prickt, either upon paper, or else upon the Steeple-wall, whilst it should be wholly intent upon the notes. Therefore in a word, the Practitioner whilst he is ringing of changes, must fix his mind fully and wholly upon the notes of the bells, and not permit it in the least to wander from thence; for the notes are to be the sole object of the thoughts in the time of ringing.

The notes being imagined to strike in a row as aforesaid, their places will then soon be understood. The notes do take their
places

places according to their successive order of striking both at fore-stroke and back-stroke; each succeeding note taking its place next to that which preceds it: for whatsoever bell leads either at fore-stroke or at back-stroke, its note lieth in the first place of the supposed row of notes; and that which strikes next after the leading note, its note lieth in the second place of the supposed row of notes, and so the rest in the like order. As if five bells should strike thus after one another either of fore-stroke or back-stroke, 5 4 1 2 3. here the 5th lieth in the first place, because it was first struck; the 4th in the second place, because it was second struck; the Treble in the third place, because it was third struck; the 2^d in the fourth place, because it was fourth struck; and the 3^d in the last place, because it was last struck; and the like of the notes in every change.

Observ. 3. The next thing to be understood by the Learner, is the precedency of the notes. Now whereas in the ringing of changes, the notes do all strike after one another at the fore-stroke, and again at the back-stroke, therefore are they said to lie before or behind each other, according to their places of striking. As if five men were standing in a row, as these five figures represent,

D 3

1 2 3 4 5,

1 2 3 4 5, the first man to stand at the fig. 1, the second man at the figure 2, &c. and that they stand with their faces all one way, that is, the first man ready to lead, and the rest to follow him one behind another. Now the first man stands before the rest, and the fifth man behind the rest; the second man stands behind the first man, but before the third; the third man stands behind the second, but before the fourth; and the fourth stands behind the third, but before the fifth. In which manner the notes being supposed to strike in the like row, may also be said to lie before or behind each other as the men did. For whatsoever note leads either at fore-stroke or back-stroke, is said to lie before the rest; and that which strikes last, to strike behind the rest. The note which lieth in the second place, as on the one hand it lieth behind the leading note, so on the other hand it lieth before the note in the third place. As the note in the third place lieth behind the note in the second place, so it lieth before the note in the fourth place. And in like manner, every note is said to lie behind those that strike before it, and before those that strike after it.

Observ. 4. A Change is to be made betwixt two notes, by moving them into each others

others places; wherein 'tis to be observed as a general Rule, That every change must be made betwixt two notes that strike next to each other. As if five bells were ringing round in this order, 12345, the 1 and 2 may make a change, or 2 and 3, or likewise 3 and 4, or 4 and 5, because each two lie next each other; but the 1 and 3 cannot, because 2 strikes between them, much less may 1 and 4, &c. The two notes which make every change, moves into each others places in the making of it; wherein one note is said to move *up*, and the other *down*. The reason why one of them is said to move up, is, because he that rings that bell, in the making of the change must hold it up at the Sett a little longer than ordinary, to delay its striking, whereby 'tis made to follow the other note which before it preceded; and because 'tis so held up, therefore 'tis said to make an *Up-change*, or to move up: and on the contrary, the reason why the other note is said to move down, is, because he that rings it, pulls down the bell a little sooner than ordinary, to make it strike before the note which before it followed; and because 'tis so pulled down, therefore it is said to make a *Down-change*, or to move down. I will here give a short though certain rule to know when an

Up-change or a Down-change is to be made: whensoever any note moves to strike behind the note wherewith it makes a change, it makes an up-change in doing it; and whensoever it moves to strike before the note, which 'tis to make a change with, it makes a down-change in doing it: so that every note which moves fromward the leading-note, makes an up-change; and when it moves toward the leading-note, it makes a down-change. I will here shew the manner of making a change: admitting that a peal of five bells were raised to a sett-pull, which is the usual compass for ringing of changes; the notes are first supposed to strike in this order, 12345. Now a change may be made betwixt any two notes that strike next each other; I will here make it betwixt the 3d. and 4th. which is to be done by moving them into each others' places. Now 'tis observable, that before the making of the change, the 3d. note lies before the 4th. that is, it strikes next before the 4th; and the 4th. lies behind the 3d. that is, it strikes behind it: now in the making of the change, the 3d. must move to strike behind the 4th: wherein it makes an up-change; and the 4th. note at the same time must move to strike before the 3d. wherein it makes a down-change; the

the change being made, the bells will strike thus, 12435. All changes whatsoever are made in the aforesaid manner: for as the 3^d note made an up-change in moving to strike behind the 4th, and the 4th at the same time a down-change in moving to strike before the 3^d, so in like manner the two notes that make every change, must in the making of it move the one up, and the other down, as the 3^d and 4th here has done. The Learner may take notice, that in ringing termes 'tis not usual to say, that a bell makes an up-change, or a down-change; but in short, that it *moves up or down*, which implies the former. When a note makes an up-change, 'tis then said to move *over* the other note; and when it makes a down-change, to move *under* it: as in the next preceding example, where the 3^d note is said to move up over the 4th, and the 4th down under the 3^d, in which manner the terms *over* and *under* are given to the two notes that make every change.

Observ. 5. In the time of ringing changes, two things are by the Practitioners to be well considered. First, to observe and readily to know, which two bells are always to make the next succeeding change: Secondly, if he is concern'd therein, to consider what bell he is to follow in the making of it.

Upon

Upon a right knowledge of these two things, depends the Practick part of this Art. To make him expert herein, he must before hand perfectly understand, and readily remember the course and method of the changes prickt with figures, wherein he ought to be so well skill'd, as to be able to prick them down divers ways, that is, to make any figure a Hunt at pleasure; which when he can readily and speedily do, without pausing to consider of the course, then 'tis presumed that he understands the methods thoroughly. But yet he will not be capable to put them in practice, untill he understands the manner of making a change in ringing; neither can he understand that, until he understands the precedency of the notes; nor the precedency, until he understands the places; nor the places, until he knows the notes one from another. Therefore the four preceding observations being first perfectly understood, and also the methods of the changes as before; the Practitioner may then successfully proceed in the ringing of changes; and as a further help therein I will here instruct him. There are three bells concern'd in the making of every single change, except only when 'tis made behind, and then but two: whensoever the note of his bell is to make a change with
any

any other note, his ear must then inform him whether it lies before or behind the other note; if it lies before, then in making the change it must move up behind it, that is, to follow it; and consequently, he must draw down his bell next after that which he makes a change with, which is called an up-change, as I said before. But if the note of his bell lies behind the other, then in making of the change it must move down to strike before it, and consequently he must draw down his bell next after that which the other before followed, this being a down-change. So that the making of an up-change is very easie, because he must always follow that bell which he makes a change with; but a down-change is more difficult, because he cannot so readily apprehend what bell he is to follow; yet there is a certain rule for it, which is this: to observe beforehand what note strikes the next but one before his, which bell he must follow in the making of the change. Whensoever the two notes, which strike next before his note, are to make a change; he must consider, that notwithstanding his note is to lie still in its place, yet he is concern'd therein, because the bell which he followed before the making of the change,, must in the making of it move away down, and therefore he must

must follow the bell that comes into its place.

The changes are to be rung, either by *walking* them, as the term is; or else Whole-pulls, or Half-pulls. By *walking* them, is meant, that the bells go round four, six, eight times or more in one change; which way is very proper for young Practitioners, to introduce them into a more ready way of Practice; for whilst the bells go round divers times in one change, they have in the mean time leisure to consider which two bells are to make the next following change, and also what bell each of them is to follow in the making of it; and so by diligence in practice they will by degrees acquire a more ready skill to enable them to ring at whole-pulls. Whole-pulls, is, when the bells go round at the fore-stroke and back-stroke in a change; and every time they are pull'd down at Sally, a new change is made. Whole-pulls was the general practice in former times; and indeed, considering the manner of the hanging of the bells in those days, they could not well be rung at half-pulls: but since the improvement of the Art of Bell-hanging, that is, with round Wheels, trussing them up in the Stock, and placing the Roll at right Angles with the Sole of the Wheel; the bells go much better, and are managed with more ease at a Sett-

Sett-pull than formerly : therefore the changes are now generally rung at half-pulls, that is, at the fore-stroke one change, at the back-stroke another, and so throughout.

In ringing half-pulls, some peals of changes will cut compass, wherein the whole Hunt comes always to lead at the back-stroke; to prevent which, make the first change of the peal at the back-stroke. In plain and single changes on six bells, to hunt (that is, whole Hunt) the Treble, third, or fifth, down at the beginning of a peal cuts compass, unless prevented as before. Also to hunt the second, fourth, or sixth up at the beginning of a peal, cuts compass, unless prevented as before. Which rules, leaving out the Tenor, serves in like manner to prevent cutting compass on five bells.

'Tis convenient in ringing, to give notice of the extream changes, and he that rings the slowest Hunt, may best do it. The manner of it is, to say *Extream*, when the leading bell is pulling down, in order to make the change next before the extream; by which means there will be one compleat change betwixt the warning and the extream: longer warning would be too much, and shorter too little.

THE

THE divers kinds of changes on Bells may be comprehended under two heads; viz. Plain Changes, and Cross Peals, which terms are comparatively given: for as the first are plain and easie only in comparison to the methods of the second; so consequently the second cross and intricate in comparison to the methods of the first. I will first shew in what respect they differ, and then proceed to the methods. Plain changes (I mean compleat peals) are such as have one univiersal method, wherein all the notes except three have a direct hunting course, moving gradually under each other in one plain and uniform order. But the methods of cross peals are various, each peal having a course differing from all others: and although most of them have Hunts, yet the Hunts have different kinds of motions, and some very intricate. Moreover plain changes are also term'd Single changes, because in the ringing of them there is only a single change made in the striking of all the notes once round either at fore-stroke or back-stroke; whereas in cross changes 'tis usual to make as many changes as the number of notes will permit. For example, supposing that a peal of 5 bells were raised, and rung at a Sett-pull; the notes are supposed to strike round
in

in this order, 12345: now any two of the notes that strike next together may make a change, therefore either a single or a double change may be made at pleasure. The single change is made by changing only two notes; the double change is made by changing four notes, that is, two to make one change and two another, yet 'tis called one double change, and not two changes, in regard 'tis made in the striking of the five notes of the bells once round: as, admit the treble, second, third, and fourth, should make a change, 'tis thus to be done, 21435, where the Treble and Second made one change, and 3, 4 another; which we will imagine so be made at the fore-stroke of the bells, and therefore 'tis called one double change, and not two changes, because 'tis entirely made in the striking of the five notes once round. So that this one double change has effected that which would have required two single changes to have done the like. For instance, there can but two notes change their places at once in a single change, therefore the Treble and Second shall first change their places thus, 21345; then the third and fourth thus, 21435: so that here the five notes have gone twice round to effect that, which in the double change was done in going once round.

And

And this is the nature of the difference between Plain and Cross changes.

As the Learner ought to proceed regularly in his practice, beginning first with the plainest and easiest methods. I will therefore observe that order, and first shew the course and methods of Plain changes.

The Changes on two Bells.

Two bells are capable to make only		1 2
two changes, which is to be done by		—
changing the notes twice, as in these		2 1
figures. —————		1 2

The Changes on three Bells.

There are six changes on three bells; which are made by this rule: the two first and two last notes must be changed by turns.

First the two first notes, which are 1 2		1 2 3
thus. —————		2 1 3

The two last, which are 1 3, thus. —		2 3 1
--------------------------------------	--	-------

The two first —————		3 2 1
---------------------	--	-------

The two last —————		3 1 2
--------------------	--	-------

The two first —————		1 3 2
---------------------	--	-------

The two last —————		1 2 3
--------------------	--	-------

In these six changes 'tis observable, that the two first notes, which were 1 2, made the first change of the six; but they may as well be rung by beginning with the

two

two last notes, which are 2, 3 thus—	1 2 3
Next the two first notes, which are	1 3 2
1 3, thus, —————	3 1 2
The two last —————	3 2 1
The two first —————	2 3 1
The two last —————	2 1 3
The two first —————	1 2 3

The six changes can be rung no more than these two ways here set down.

The Six changes are sometimes rung by observing a hunt therein, which is very improper, since every note has a like course. Yet I confess in demonstrating the methods on twelve, I did there admit a Hunt into the six changes; but that was only for demonstration sake.

The compleat peals of plain changes, from three to all greater numbers whatsoever, as the Twenty four changes on four, the Sixscore on five, the Seven hundred and twenty on six, &c. are prickt and rung by one method; all the notes having a hunting-motion, except only three in each peal, which three do make the six changes in the same manner as they are before prickt. So that the Six changes on three may be term'd the *basis* or foundation of the compleat peals on all greater numbers.

Every Hunting note in each peal has a

E

certain

certain number of notes assigned, through which 'tis always to hunt. The term *hunt* is given to a note in respect of the manner of its motion, which I will shew in this example. First, the notes of four bells are supposed to strike round in this order, 1234. The Treble shall be the Hunt, and the other three assigned or appointed for it to hunt through. Now whereas the Treble-note leads, it must move through its assigned number to strike behind them: and whereas every change must be made betwixt two notes that strike next each other, as I have shewed before in the 4th *Observation*; therefore the hunting-note is confin'd to move gradually through the rest by making a change with each note that strikes next to it; and accordingly it must first move into the 2^d place, next into the 3^d place, and lastly into the 4th. So that 'tis to make a change with every note that lies behind it; first with the 2^d note, next with the 3^d, and lastly with the 4th.

The first change is thus	_____	1234
--------------------------	-------	------

The second thus	_____	2134
-----------------	-------	------

The third thus	_____	2341
----------------	-------	------

The hunting note has here moved through its assigned number; for whereas at first it did lead, now it strikes behind them. Wherein 'tis observable, that it made up changes

changes all the way; which of necessity it must do, because every note with which it was to make a change, lay behind it: and because it made up changes, therefore tis said to have hunted up. The hunting-note shall now move through its assigned number again, to lead as at first. Therefore first it must move into the 3^d place, then into the second place, and lastly into the first place, which is called the Treble's place; in which motion it must make a change with each note that strikes next before it: first with the 4th note, next with the 3^d, then with the 2^d.

The first change thus ———— | 2314

The second thus ———— | 2134

The third thus ———— | 1234

'Tis observable, that here the Treble made down-changes all the way, which of necessity it must do, because every note with which it was to make a change, lay before it; and because it made down-changes, therefore it is said to have hunted down. This is the manner of the motion of the hunting notes in all peals of plain changes; for they hunt up and down through their assigned number, as the 1 here has done. This example is plain and full to instruct the Learner in the hunting of any bell, therefore he ought to peruse it diligently, that he may understand the true

scope and meaning of it; and as a help he may apply himself to practice by taking a Treble, and attempt to hunt it up and down as this Example directs; which he may the more readily do, if he understand the 5th Observation before set down, which guides him to make a change in ringing. So that partly by reading and well considering of what I have here wrote, and partly by practice, he may in a short time become perfect in the hunting motion of any note; which when he rightly apprehends, he will then presently be capable of understanding the following methods; and therefore I shall be the more brief in my directions to them.

The Changes on four Bells.

Twenty four changes may be rung upon four bells: but the Learner may first practice the twelve changes, and the eighteen changes. In the twelve changes the notes are all to be hunted up after one another, which may be called the Twelve all over. First the treble-note must be hunted up, letter (a); then the second note must likewise hunt up, letter (b); next the

	1234
a {	2134
	2314
	2341
b {	3241
	3421
	3412
c {	4312
	4132
	4123

third

third note must hunt up, letter (c); and lastly the 4th note also, letter (d). | 1423
| 1243
| 1234

The four notes may also hunt down one after another. First, the 4th note must hunt down to lead: then the 3^d note likewise, and so the 2^d and Treble one after another, which may be term'd the Twelve all under.

Courteous Reader, in my directions to the course of each peal, I do there refer by letters to the examples; which I am forced to do, to prevent those confused breaks, and unhandsome spaces, which otherwise would have happen'd both in examples and precepts. Whatever letter I mention in my directions, refers to the like at the figures. For instance; in my directions to the twelve changes next before, I there directed the treble-note to be first hunted up, letter (a); which letter refers to the the like letter at the first three changes of the twelve, where the Treble hunted up, as 'tis here again represented, and the like of the rest. | 2134
| 2314
| 2341

In the Eighteen changes, the Treble is a
E 3 hun-

hunting note, but never hunts up farther than the 3^d place; and when it lies there, the two first notes must make a change; and every time it leads, the two hindmost notes. First it hunts up into the 3^d place, letter (a); the two first notes, which are 2.3, make a change, letter (b); the Treble hunts down (c). The two hindmost notes make a change (d), the Treble hunts up (e). The two first notes, which are 3.4, make a change (f); the Treble hunts down (g); the two last notes, which are 3.2, make a change (h), which method being continued, will bring the bells round at the end of eighteen changes. The Eighteen changes may also be rung by hunting the 4th note down into the 2^d place, and then a change to be made behind: the 4th note to be hunted up again into its own place, and then a change to be made before, which course being continued, will produce Eighteen changes.

The Six changes on three are the ground of the Twenty four changes on four; for one of the four notes hath a constant hunting motion

	1234
	2134
a	2314
b	3214
c	3121
	1324
d	1342
	3142
e	3412
f	4312
	4132
g	1432
	1423
h	4123
	4213
i	2413
	2143
j	1243
	1234
m	1234

tion through the other three, in the same manner as in the preceding Example, pag. 50. and the three notes are to make the six changes in the same manner as I have before shewed in the changes on three bells; one of the six changes being always made every time the hunt lies either before or behind the three bells: therefore if the Learner do but rightly apprehend the course of the six changes, and also the manner of the motion of the hunting note, he will presently understand the method of the twenty four changes. The six changes in the twenty four, according to the terms of ringing are called Extream changes, and the three bells which makes them, Extream bells. So that in the twenty four changes, there is a hunt and three extream bells. Every time the hunt lies either before or behind the extream bells, an extream change must then be made. The extream changes may be made two ways, viz. either betwixt the two farthest extream bells from the hunt, or else betwixt the two nearest extream bells to it. In this Example every extream change shall be made betwixt the two farthest extream bells from the hunt, and the treble shall be the hunting note, which must first

1234
2134
2314
2341
3241

hunt up (*a*); then the two farthest
 notes from the hunt, which are 2.3, *c* | 3214
 must make an extream change (*b*). | 3124
 The Treble must hunt down (*c*). *d* | 1324
 The two farthest notes from the | 1342
 hunt, which are 2.4, must make an | 3142
 extream change (*d*). The treble *e* | 3412
 must hunt up (*e*); the two farthest | 3421
 notes from the hunt, which are 3.4, *f* | 4321
 must make an extream change (*f*). *g* | 4312
 The treble-note must hunt down | 4132
 (*g*). The two farthest extream bells | 1432
 from the hunt, which are 3.2, must | 1423
 make an extream change (*b*). The | 4113
 treble must hunt up (*i*). The two *i* | 4213
 farthest notes from the hunt, which | 4231
 are 4.2, must make an extream *k* | 2431
 change (*k*). The treble must hunt down | 2413
 (*l*). The two farthest extream bells, which are 4.3, | 2143
 must make an extream change (*m*), which con- | 1243
 cludes the peal. Now the Learner for his sa- *m* | 1234
 tisfaction may take out the extream changes
 in the same order as they were made, as first
 at (*b*), then (*d*), and so (*f. b. k. m.*) and they
 will stand as they are here set down; 3241
 where 'tis evident, that 2.3.4 have 1342
 made the six changes according to 4321
 the method of the first six changes 1423
 on three bells, before set down, 2431
 (pag. 1234

(pag. 48.) where the first change of that six was 213, and this being 324, is the same in course though the figures differ, and the rest of the changes in this six, are likewise the same in course and method with those.

In the preceding twenty four changes, every extream change was made betwixt the two furthest extream bells from the hunt. I will therefore here set down an example, where they shall be made between the two nearest bells to it. First, the treble hunts up (a). The two next notes to the hunt, which are 3.4, must make an extream change (b). The Treble must hunt down (c). The two nearest notes to the hunt, which are 2.4, must make an extream change (d). The Treble hunts up (e). The two nearest extream bells to the hunt, which are 2.3, must make an extream change (f). The Treble hunts down (g). The two next extream bells to the hunt, which are 4.3, must make a change (h). And the like extream changes being made as at (k) and (m), concludes the peal.

The six extream changes, viz.

	1234
a	2134
	2314
b	2341
	2431
c	2413
	2143
d	1243
	1423
e	4123
	4213
f	4231
	4321
g	4312
	4132
h	1432
	1342
i	3142
	3412
j	3421
k	3241

(b.)

(*b. d. f. h. k.* and *m.*) being set down by themselves, will stand in this order, as here you see; where 'tis plain, that 2 3 4 have made the six changes, according to the method of the last six changes on three bells, *pag. 49.* where the first change of that six is made between the last two notes thus, 1 3 2. So in like manner is the first here thus, 2 4 3, which is the same method with that, though not the same figures.

	3214
l	3124
	1324
m	1234
	2431
	1423
	4321
	1342
	3241
	1234

So that the making of the extream changes two ways in the twenty four, proceeds from the two ways of making the six changes on three bells. This last way of making the extream changes, may, for distinction from the other way, be called *mediums*; which term is very proper, in regard that the two middlemost of the four notes do always make the extream change. The extream changes in one peal must all be made alike, that is, either betwixt the two farthest notes from the hunt, or else betwixt the two nearest notes to it; but the most usual way is to make them between the two farthest.

Any note may be made a hunt at pleasure, and its first motion at the beginning of the peal may be either up or down. The twenty four

four changes may be rung sixteen ways according to the aforeſaid method, yet the changes in each are ſtill one and the ſame; but by making each note a hunt, and moving it either up or down at the beginning, and alſo by making the extream changes two ways, the courſe of the changes will be ſo altered, that the ſame changes ſhall not come all along together in any two of thoſe ſixteen ways. With the hunting of one note it may be rung four ways; for the note may move either up or down at the beginning of the peal; then in its motion either way the extream changes may be made two ways, as before: ſo that to make each note a hunt, and with each hunt to ring it four ways makes ſixteen in the whole. Wherein 'tis obſervable, that the treble-note cannot be moved down at firſt, nor the 4th up; therefore an extream change muſt firſt be made,

2d.	3d.	4. up.
1234	1234	1234
3134	1243	2134
2143	2143	2143
1243	2134	2413
1423	2314	4213
1432	3214	4231
4132	3241	2431
4123	2341	2341
4213	2431	2314
2413	2413	3214
2431	4213	3241
4231	4231	3421
4321	4321	4321
4312	3421	4312
3412	3412	3412
3421	4312	3142
3241	4132	3124
2341	4123	1324
2314	1423	1342
3214	1432	1432
3124	1342	4132
3142	3142	4123
1342	3124	1423
1324	1324	1243
1234	1234	1234

made, which is as effectual as if either note had moved at first. I have here prickt the twenty four changes three ways, wherein the extreame changes are all made betwixt the two farthest notes from the hunt.

The Changes on five Bells.

There are sixscore changes to be rung on five bells; but the Learner may first practise some shorter peals, as the Ten changes, the twelve, the Fourteen, the Twenty all over, the Twenty with one hunt, and the Forty eight.

In the Ten changes the treble must first hunt up (*a*); the 2.3 must make a change (*b*). The treble must hunt down again (*c*); the 3.2 must make another change (*d*). The ten changes may also be rung by hunting down the 5 to lead; then 3.4 to make a change; the 5 to be hunted up again, and the 4.3 to make another change.

	12345
	21345
<i>a</i>	23145
	23415
	23451
<i>b</i>	32451
	32415
	32145
<i>c</i>	31245
	13245
<i>d</i>	12345

In the Twelve changes the treble hunts up into the third place, then the two first notes make a change; the treble hunts down again, then the two hindmost

	12345
	21345
<i>a</i>	23145
	32145
<i>b</i>	31245
	13245
<i>c</i>	notes

notes make a change. First the treble hunts into the 3^d place (*a*); the two first notes 2. 3 make a change (*b*). The treble hunts down (*c*); the two last notes make a change (*d*); the treble hunts up (*e*); the two first notes make a change (*f*); the treble hunts down (*g*); the two last notes make another change (*h*).

<i>d</i>	13254
<i>e</i>	31254
<i>f</i>	32154
<i>g</i>	23154
<i>h</i>	21354
	12354
	12345

In the Fourteen changes, the treble first hunts up behind; then the 5 hunts down to lead; the treble then hunts down again into its own place; and the fifth also hunts up into its own place.

The Twenty all over are rung in the same manner as the Twelve all over upon four bells, to which I refer.

In the Twenty changes with one hunt, the hunting note continually hunts up and down through the other notes, and every time it lies either before or behind them, an extream change must be made betwixt the two farthest notes from it. The treble shall be the hunt, and first hunteth up (*a*). An extream change is made (*b*); the treble hunts down (*c*); an extream change is made (*d*); which

	12345
<i>a</i>	21345
	23145
	23415
<i>b</i>	23451
	32451
	course

course must be continued to the end. The extream changes may also be made betwixt the two next notes to the hunt. Any note may be made a hunt at pleasure, yet still observing to make the extreams as before.

		32415
	c	32145
		31245
		13245
	d	13254

In the forty eight changes, the 5th and 4th are both hunts, and 1 2 3 do make the six changes; the 5. 4 do hunt down by turns, and when either of them leads, then one of the six changes is made. First the 5 hunts down (a); one of the six changes is made (b); the 5 hunts up into its own place (c); the 4 hunts down (d); another of the six changes is made (e); then the 4 must hunt up, and the 5 down again, &c. which course must be continued to the end.

		12345
		12354
	a	12534
		15234
	b	51234
		52134
	c	25134
		21534
		21354
		21345
	d	21435
		24135
	e	42135
		42315

In the Sixscore changes, four of the notes do make the Twenty four changes, and the fifth note hunts continually through them: so that the course and method of the Sixscore is in effect the same with that of the Four and twenty. For as the Four and twenty comprehended the Six changes on three; so in like man-

manner the Sixscore comprehend the Four and twenty changes on four, and the Six changes on three. Therefore in the Sixscore there must be two hunts and three extream bells; one of the hunts is term'd the whole-hunt, and the other the half-hunt, The three extream bells do make the Six changes in the same manner as they were made before in the Four and twenty changes upon four bells, and are here also call'd Extream changes: the half-hunt and three extream bells do make the Four and twenty changes in the same manner as the Four and twenty changes on four bells were likewise made: and the whole hunt continually hunts through those four bells, and every time it either leads or lies behind them, one change must then be made in the twenty four.

1 shall here be the whole-hunt,
2 the half-hunt, and 3 4 5 extream bells: so that 2 3 4 5 must make the four and twenty changes. Every extream change shall be made betwixt the two farthest extream bells from the half-hunt. First, the treble hunts up (a). One of the twenty four changes must now be made; and therefore 2 which is the

	12345
	21345
a	23145
	23415
	23451
b	32451
	32415
c	32145
	31245
	13245
d	13425

hunt

hunt in the twenty four, must
 begin its motion through the
 extream bells (*b*). The treble
 hunts down (*c*); the half-hunt
 must proceed in its course (*d*);
 the whole-hunt hunts up (*e*);
 The half-hunt proceeds forward
 (*f*); the whole-hunt moves down
 (*g*). The half-hunt should now
 proceed, but having finished its
 course through the extream
 bells, therefore an extream
 change must now be made be-
 twixt the two farthest extream
 bells from it, which are 3.4 (*h*).
 The treble must hunt up (*i*);
 the half-hunt must now begin its
 course again through the ex-
 tream bells (*k*); treble hunts
 down (*l*); the half-hunt pro-
 ceeds in its course down (*m*);
 treble hunts up (*n*); the half-
 hunt proceeds in its course down
 (*o*); treble hunts down (*p*); the
 half-hunt having finished its
 course, therefore an extream
 change must be made betwixt
 the two farthest extream bells
 from it, which are 3.5 (*q*). The

	31425
<i>e</i>	34125
	34215
	34251
<i>f</i>	34521
	34512
<i>g</i>	34152
	31452
	13452
<i>b</i>	14352
	41352
<i>i</i>	43152
	43512
	43521
<i>k</i>	43251
	43215
<i>l</i>	43125
	41325
	14325
<i>m</i>	14235
	41235
<i>n</i>	42135
	42315
	42351
<i>o</i>	24351
	24315
<i>p</i>	24135
	21435
	12435
<i>q</i>	12453
	21453
<i>r</i>	24153
	24513
	24531
<i>s</i>	42531
	treble

treble hunts up (r). The half-hunt begins its motion again through the extream bells, and first it moves up over 4th (s). The whole hunt moves down (r); the half-hunt must proceed in its course, and therefore must move over another note (v). And this method being observed, will produce sixscore changes, and then the bells will in course come round. Now 'tis observable, that the changes at (b d f h k m o q s v x and z, being set down by themselves, that is, the 1 to be excluded, and the changes on 2345 to be set directly under one another in the same successive order as they were made, it will thereby appear, that those four figures have made twelve changes of the twenty four, according to the method of the first twenty four changes on four bells before set down. And whereas here are just half the sixscore changes prickt down, so likewise here are just half the four and twenty changes made therein: and the remaining part of this sixscore being likewise prickt, the remaining part of this four and twenty would also appear therein, which part being added to the former twelve, would make up

the twenty four changes compleat; and the method of them the same in all respects with the first twenty four changes on four bells, pag.

Any note may be made a whole hunt at pleasure, and its first motion at the beginning of the peal may either be up or down. Any note may also be made a half-hunt, and its first motion likewise up or down at pleasure; yet still observing that the half-hunt and three extream bells must make the twenty four changes, as in this last example. So that in the sixscore changes the Learner may observe, that the three extream bells are always assigned for the half-hunt to hunt through; and the half-hunt and three extream bells are also assigned for the whole hunt to hunt through: so that the whole hunt always hunts through four notes, and the half-hunt through three. The extream changes may be made two ways; first, betwixt the two farthest extream bells from the half-hunt, as in this last example: secondly, betwixt the two next extream bells to the half-hunt, which may be called *mediums*, for distinction from the former. But the most usual and easiest way, is to make them betwixt the two farthest notes from the half-hunt.

Where

Whereas the treble or fifth being made whole-hunts, the first of them can neither be moved down; nor the last up, at the beginning of a peal; therefore one of the twenty four changes must first be made, which is as effectual, as if the treble had moved down, or the 5th up.

The Learner may observe, that two of the four and twenty changes are never made together in any sixscore, but as soon as one is made, the whole-hunt moves through the four notes before another can be made.

The sixscore changes may be rung one hundred and sixty ways, which are thus demonstrable. There are five times four figures to be produced out of five, and not twice four the same figures: as 1234. 1235, 1245, 1345. 2345. with each four the twenty-four changes may be prickt sixteen ways, as before I have shewed on four bells; so that here will be five times sixteen four and twenties, which amount to eighty, and not two alike. Now to each four add the fifth figure which is wanting, as to 1234 add 5, to 1235 add 4, to 1245 add 3, to 1345 add 2, to 2345 add 1, and every fifth figure being hunted through the sixteen four and twenties, which the other four make, as the 5 through the sixteen four and twenties which the

1234 make, and the like of the rest, will produce as many sixscores as there were four and twenties, that is, 80. Then the whole hunt may hunt two ways through each four and twenty, that is, up and down at the beginning, which doubles the former number, and makes 160 in the whole.

Treble up, fifth down.

12345	12534	15243	21453	—	14325	13524
—	21534	51243	24153	14253	<i>Extre.</i>	13254
21345	25134	52143	24513	14523	13425	—
23145	25314	52413	24531	—	—	13245
23415	25841	52431	24351	15423	13452	<i>Extre.</i>
23451	52341	25431	24315	<i>Extre</i>	13542	12345
23541	52314	25413	24435	15432	—	—
23514	52134	25143	21435	—	15342	—
23154	51234	21543	12435	14532	<i>Extre.</i>	—
21354	15234	12543	<i>Extre.</i>	14352	15324	—
12354	<i>Extre.</i>	12453	14235	—	—	—

Treble up, fourth down.

12345	12435	41253	21543	52134	—	14325
—	14235	14253	12543	51234	15342	13425
21345	41235	12453	12534	15234	15324	—
23145	42135	21453	21534	19243	—	13245
23415	42315	24153	25134	—	13524	13254
23451	42351	24513	25314	15423	13542	—
24351	<i>Extre.</i>	24531	25341	14523	—	12354
24315	42531	25431	<i>Extre.</i>	—	13452	12345
24135	42513	25413	52341	14532	14352	—
21435	42153	25143	52314	15432	—	—

Second down, fourth up.

12345	31524	34125	43512	35412	Extre.
21345	31254	34215	43521	35421	53142
21345	32154	32415	43251	35241	53124
21354	23154	23415	42351	32541	53214
12354	23145	24315	24351	23541	52314
13254	32145	42315	23451	23514	25314
13524	31245	43215	32451	32514	25341
13542	31425	43125	34251	35214	52341
Extre.	31452	43152	34521	35124	53241
31542	34152	Extre.	34512	35142	Ex.

In ringing terms the hunts are named in short, as in the peals here prickt. The first which is named is here understood to be the whole-hunt, and the last the half-hunt. For instance, Treble is the whole-hunt, and fifth the half-hunt; and treble is the whole-hunt, and fourth the half-hunt, &c.

The Changes on six Bells.

Here are seven hundred and twenty changes to be rung on six bells. But the Learner may first practice some shorter peals.

The twenty four changes are thus rung. The treble must continually hunt through the rest of the notes, and every time it leads

or lies behind them, an extream change must then be made between the two farthest notes from it. The treble hunts up (a). A change is made betwixt the two farthest notes from it, which are 2.3 (b). The treble hunts down (c). An extream change is made betwixt 5.6 (d), which method must be continued to the end. Any note may be made a hunt at pleasure, and the extream changes may as well be made betwixt the two nearest notes to the hunt. The Thirty-all-over are rung according to the method of the Twelve-all-over upon four bells, to which I refer.

The thirty six changes are thus rung. The treble hunts up into the third place, and then the two first notes make a change. The treble hunts down again to lead, and then the two notes in the 3^d and 4th places do make a change, except the 2 lies next the treble, and then the two hindmost notes. The treble hunts up (a). The two first notes make a change (b).

	123456
	213456
	231456
a	234156
	234516
	234561
b	324561
	324516
	324156
	321456
c	312456
	312456
	132456
d	132456

	123456
	213456
	231456
a	321456
b	321456
	312456
c	132456
	134256
d	314256
	341256
e	431256
f	413256
	143256
g	143256
	142356
h	142356

The

The treble hunts down (c); the 2.4 make a change (d). In which manner the changes are to be made untill the treble leads, and the 2 (which may be term'd the half-hunt) lies next it, and then the extream change is made behind, as in the last change of this example, there being but two of these changes in the peal.

In the Twelvescore long-hunts, (otherwise called the *Esquire's twelvescore*): the 6th and 5th are hunts, and 1234 do make the twenty four changes. The 6th and 5th do hunt down by turns, and when either of them leads, one of the twenty four changes must then be made. The course and method of this is the same with that of the forty eight changes on five bells, to which I refer the Learner.

In the Sevenscore and four, the treble and tenor are both hunts; and 2345 do make the twenty four changes, 2 being the hunt therein. The treble and tenor do both hunt at one and the same time, the one up, and the other down, crossing each others course; and when one of them leads, the other

412356
421356
241356
214356
124356
124365
Ge.

123456
213465
231645
236145
263415
623451
632451

always lies behind ; at which time one of the twenty four changes must be made. The extream changes in this peal are made in the same manner as before I have shewed upon four bells. The treble hunts up, and the tenor down (a). One of the twenty four changes is made (b). The treble hunts down, and the tenor up (c).

	362413
	326145
c	321645
	312465
	132456
d	134256
	314265
	341625
e	346125
	364215
	634251
f	634511
	&c.

Another of the twenty four changes is made (d). The treble hunts up, and the tenor down (e), &c. which method must be observed to the end.

In the sixscore changes there is a whole hunt, a half-hunt, and four extream bells. The half-hunt and four extream bells do make the twenty changes in the same manner as the twenty changes were made upon five bells with one hunt. pag. 61. The whole hunt hath a continual motion through the other five notes, and every time it leads and lies behind them, one of the twenty changes must then be made. In this example, treble is the whole hunt, 2 the half-hunt, and 3456 extream bells; therefore 23456 must make the twenty changes wherein 2 is the hunt, and every time it lies either before the four extream

extream bells, or behind them, an extream change must then be made, which here shall be betwixt the two farthest extream bells from the half-hunt. The treble hunts up (a). One of the twenty changes must now be made, therefore 2 being the hunt in it, must begin its course through the extream bells (b). The treble hunts down (c); The half-hunt proceeds forward (d); the treble hunts up (e); the half-hunt proceeds forward in its course (f); the treble hunts down (g); the 2 proceeds forward (h); the treble hunts up (i); the half-hunt should now proceed forward, but its course through the extream bells being finished, therefore an extream change must be made betwixt 3. 4, which are the two farthest extream bells from it, (k). The treble must hunt down (l); the half-hunt must now go its course again through the extream bells, and first it moves down under the 6th, (m) &c.

123456

213456

231456

234156

234516

234561

324561

324516

324156

321456

312456

132456

134256

314256

341256

342156

342516

342561

345261

345216

345126

341526

314526

134526

134562

314562

341562

345162

345612

345621

435621

which

which method must be continued to the end. Any note may be made a whole hunt at pleasure, or a half-hunt also. And the extream changes may be made betwixt the two nearest extream notes to the half-hunt; but with all observing to make all the extreams in one peal alike. There are four extream changes in each peal, and thirty changes distance from one to another.

	435612
	435162
	431562
	413562
	143562
	143526
	&c.

The method of the Seven hundred and twenty, hath an absolute dependency upon the method of the Sixscore changes on five bells; for five of the notes are to make the sixscore changes, and the sixth note hunts continually through them, and every time it leads or lies behind them, one of the Sixscore changes must then be made. The method of the Seven hundred and Twenty is in effect the same with that of the Sixscore: for as the Sixscore comprehended the Twenty four changes on four, and the Six on three; so likewise the Seven hundred and twenty comprehend the Sixscore changes on five, the Twenty four changes on four, and the Six changes on three. Therefore here must be three Hunts, and three Extream bells: the three Hunts are thus distinguished; one of them

them is call'd the *whole-hunt*, another the *half-hunt*, and the other the *quarter-hunt*. The *Half-hunt*, *Quarter-hunt*, and three *Extream* bells, are to make the *Sixscore* changes; the *Quarter-hunt* and three *Extream* bells are to make the *Twenty four* changes, and the three *Extream* bells are to make the *six* changes, which are here also called *extream* changes, and made in the same manner as before I have shewed upon four bells. In this example here prickt, *treble* is the *whole-hunt*, *2d* the *half-hunt*, *3d* the *quarter-hunt*, and *4 5 6* *extream* bells.. Now 'tis observable, that *4 5 6* are to make the *six extream* changes, which will divide the *seven hundred and twenty* into *six* equal parts; the *3 4 5 6* are to make the *twenty four* changes, wherein the *3d* is the *hunt*, (but in the *seven hundred and twenty* 'tis call'd the *quarter-hunt*;) and *2 3 4 5 6* are to make the *sixscore* changes, wherein the *2d* is the *whole-hunt* (though in the *720* 'tis call'd the *half-hunt*;) by which 'tis evident, that the *treble* continually hunts through these five *2 3 4 5 6*, the *2d* through the four *3 4 5 6*, and the *3d* through these three *4 5 6*; which are assigned for the respective *hunts* to hunt through, from the beginning to the end of the peal. First the *treble* hunts up (*a*). Now one of the *sixscore* changes

changes must be made, therefore the 2d being the *hunt* in the *sixscore*, must begin its course through the other four notes (b). The *treble* hunts down (c); the 2d proceeds in its course (d); the *treble* hunts up (e). The 2d proceedeth forward in its course (f); the *treble* hunts down (g); the 2d proceeds forward (h); the *treble* hunts up (i); the 2d, which is the *half-hunt*, should now proceed forward, but having finished its course through the four bells, therefore the 3d, which is the *quarter-hunt*, must begin its motion through the *extream* bells (k). The *treble* hunts down (l). The *half-hunt* must now begin its course again through the four bells, and first therefore it moves down under the 6 (m). The *treble* must hunt up again, and then the 2d must move down under another bell, which method must be observed untill the 2d has moved quite down through

123456

213456

231456

234156

234516

234561

324561

324516

324156

321456

312456

132456

134256

314256

341256

342156

342516

342561

345261

345216

345126

341526

314526

134526

134562

314562

341562

345162

345612

345621

435621

435612

435162

431562

413562

143562

143526

through the four bells again, and then the 3d must proceed forward by moving over another of the *extream* bells; which method must be observed in the motion of the three *hunts*, until the *quarter-hunt* hath moved up behind the *extream* bells, and then the *whole* and *half-hunts*, having gone their course again through the bells, an *extream* change must be made: after which the *whole*, *half*, and *quarter-hunts* proceed again in their course as before.

123456			
213456	345216	413526	
231456	345126	431526	
234156	341526	435126	
234516	314526	435216	
234561	134526	435261	
b 324561	b 174562	b 432561	
324516	314562	432516	
324156	341562	432156	
321456	345162	431256	
312456	345612	413256	
132456	345621	143256	
b 134256	q 435621	b 142356	
314256	435612	412356	
341256	435162	421356	
342156	431562	423156	
342516	413562	423516	
312561	143562	423561	
b 335261	b 143526	b 243561	

243516	453216	452613
243156	453126	452163
241356	451326	451263
214356	419326	415263
124356	145326	145263
<i>b</i> 124536	<i>b</i> 145362	<i>b</i> 142563
214536	415362	412563
241536	451362	421563
245136	453162	425163
245316	453612	425613
245361	453621	425631
<i>b</i> 425361	<i>q</i> 456321	<i>b</i> 245631
425316	456312	245613
425136	456132	245163
421536	451632	241563
412536	415632	214563
142536	145632	124563
<i>b</i> 145236	<i>b</i> 145623	<i>Extrem.</i>
415236	415623	125463
451236	451623	
452136	456123	
452316	456213	
452361	456231	
<i>b</i> 453261	<i>b</i> 452631	

The letter *b* standing by the figures signifies *half-hunt*, that is, the motion of the *half-hunt* in that change; and likewise *q* the *quarter-hunt*. Here are the first *sixscore* changes of a *seven hundred and twenty*; wherein 'tis observable, that all the changes at *b* and *q*, being set down by themselves in the same successive order as they were made, that is, the *a* to be excluded, and the changes on the o-
ther

ther five figures to be set down directly under one another, and the *extream* change at last, it will thereby appear, that the five figures have made twenty changes of a *sixscore*, according to the method of the example on five bells, pag. 63. with this only difference, these are made on 23456, and those were made on 12345; but the five figures of each have both alike course, the 2^d and 3^d going the same course in this, as the *treble* and 2^d did in that. Now whereas the *sixscore* changes here prickt down are a sixth part of the *seven hundred and twenty*; so likewise are the *twenty changes*, here made by 23456, a sixth part of the *sixscore*: and then consequently, the *seven hundred and twenty changes* being all prickt, the *sixscore changes* on 23456 would plainly appear therein, in the same manner as twenty of them appear in this *sixscore*. Therefore more need not be said of the method of the 720, since the method of the *sixscore changes* on five bells being well understood, will be a sure and certain guide to the Learner: only this one thing farther; in ringing of this peal with any *hunts*, the second *extream* change being made between the two bells which made the first *extream*, will always bring the bells round at the end of the *twelvescore*. But after *twelvescore* are made, they

they cannot in course be brought round until the end of the 720.

The 720 changes may be rung one thousand nine hundred and twenty several ways, which is thus demonstrable. There are six times five figures to be produced out of six, and not twice five the same; as 12345. 12346. 12356. 12456. 13456. 23456. and with each five the *sixscore* changes may be prickt one hundred and sixty ways, as before I have shewed on five bells. Now to each five add the sixth figure which is wanting, as to 12345 add 6, to 12346 add 5, to 12456 add 3, to 13456 add 2, and to 23456 add 1. And the sixth figure which is added, being hunted through all the several *sixscores* which the other five figures make; for instance, the 6 through the 160 several *sixscores* which 12345 make, and the 5 also through the 160 several *sixscores*, which 12346 make, and the like of the rest; will produce as many *seven hundred and twenties* as there are *sixscores*, that is, six times one hundred and sixty, which amounts to nine hundred and sixty. Then the note that hunts through the other five, may hunt two ways through each *sixscore*, that is, up and down, which will double the former number, and make nineteen hundred and twenty in the whole.



AN
INTRODUCTION
to the Knowledge of
CROSSE PEALS.

THese Peals are term'd *cross* in respect of their intricate methods; wherein several notes moving at one and the same time, do thwart or *cross* each other in their course and motion, some moving up, others at the same time down, gives this Denomination to the Peals. The end of pricking them is to make the compleat number of changes by a method differing from that of other Peals. For although five can be varied but 120 ways, and six but 720 &c. yet the methods by which they are varied, are differing, according to the several fancies of the Artist. And as order and method are the only *basis* on which this Art is founded; so the skilful Artists; the better to effect the aforesaid end, have thought fit in most peals to appoint one note to be as it were a Helm or Rudder,

G

by

by which the course of the peal is steered; which note is term'd a *Hunt*, and hath one constant uniform motion throughout the peal, differing from that of the other notes. The manner of its motion is continually through the other notes, that is, from leading to strike behind, and from thence again to lead, which motion, first up and then down, is term'd one compleat Course. Some peals upon five bells, as *old Doubles*, &c. consist of single Courses; there being ten changes in every single Course, and twelve of those Courses in the peal. Other peals upon five bells, as *London Paradox*, &c. consist of double Courses; there being twenty changes in every double Course, and six of those Courses in the peal. Upon six bells there are also single and double Courses, viz. twelve changes in every single Course, as in *Grandfire Bob* &c. and twenty four changes in every double Course, as in *Colledg Bob*, &c. the change wherein the *Hunt* leaves leading being the first change of every Course. Now the methods of these peals being well considered, they will be found more easie than at the first view they may seem to be; for the first Course of any *Course* Peal being judiciously viewed, the general method of the whole peal will thereby appear: for all the

courses

Courses in a Cross peal do agree in these three respects. First, in the motion of the *Hunt*; secondly, in the motion of the rest of the notes; thirdly, in the making of the changes, which will plainly appear in the following peals, (some few changes in each peal only excepted, as hereafter I shall shew in my Directions to the several peals :) for proof of which I will give an instance in the peal of new Doubles upon five bells, these being the three first Courses of the peal. Wherein 'tis

observable, that the last change of the first Course which is 13524, I have set down again at the top of the second Course; and likewise the last change of the second Course which is 15432, I have also put at the top of the third course; which I have done for the plainer Demonstration of what I here intend. So that the ten lowermost changes are the ten changes of each Course.

<i>First</i> Course	<i>2d</i> Course	<i>3d</i> Course
12345	13524	15432
21354	31542	51423
23145	35124	54132
32415	53214	45312
23451	35241	54321
32541	53421	45231
23514	35412	54213
32154	53142	45123
31245	51324	41532
13257	15342	14523
13524	15432	14253

First therefore, as to the motion of the *hunt*, the 1 which is the *hunt* moves directly up behind, where it lieth twice, and then

down again to lead, where it lieth also twice, as appears in each of these three Courses, and the like also throughout the peal.

Secondly, as the 2^d, 3^d, 4th, and 5th bells move through the first Course, so the bells that lie in the 2^d, 3^d, 4th, and 5th places in the last change of every course, moves in the same manner also through the next following course. For instance; first, for the bell in the 2^d place: in the first course the 2^d bell moves down to lead, where it lieth twice, and then dodges until the *treble* comes down to it. So likewise in the second course, the 3^d bell lying in the 2^d place moves down to lead, where it lies twice, and then dodges until *treble* comes down to it; and also in the third course, the 5th bell lying in the 2^d place, moves down to lead where it lieth twice, and dodgeth until the *treble* moves down to it. Secondly, for the bell in the 3^d place. In the first course the 3^d bell moves down to lead, and there dodgeth until the *treble* comes down to it: so likewise in the second course the 5th bell lying in the 3^d place moves down to lead, and there dodgeth until the *treble* comes down to it: and also in the 3^d course the 4th bell lying in the 3^d place moves down to lead, and there dodgeth until the *treble* comes down to it.

it. Thirdly, for the bell in the fourth place : In the first course, the fourth bell moves up behind, then down into the 3^d place where it lieth twice, then up again behind ; so likewise in the second course, the 2^d bell lying in the 4th place moves up behind, then down into the 3^d place where it lieth twice, then up again behind ; and also in the third course the 3^d bell lying in the 4th place, moves therefore up behind, then down into the 3^d place where it lieth twice, then up again behind. And such uniform motion also hath the bell in the 5th place through every course.

Thirdly, that the changes in all the courses of the peal are made alike, will here also plainly appear in the three courses. For the first change of every course is made on the two first and two last bells ; the second change of every course is made on the four last ; the third is made on the four first ; the fourth on the two first and two last ; the fifth on the four first ; the sixth on the two first and two last ; the seventh on the four first ; the eighth on the four last ; the ninth on the two first and two last ; and the tenth single.

And thus in every Cross-peal the Courses do all agree, first in the motion of the Hunt, secondly in the motion of the rest of the notes, and thirdly in the making of the chan-

ges, as before I have shewed. So that these three things being well observed; will be very helpful both in pricking and ringing them, the first and third being most proper to direct the pricking of them, and the first and second the ringing of them. Therefore if the Practitioner do but observe how the changes are made in the first course of a peal, wherein he must have particular regard to the motion of the Hunt, (which a little further help from the following directions to each peal, as to the making of *Extraneous* and Bob-changes) he may easily prick down all the following Courses of the same peal; and therefore in the following peals I have only prickt down two or three of the first courses for an example, and then have abridged the rest of the peal by setting down only the changes that are made at the leadings of the Hunt. But note, there are some few *Cambridge*-peals upon five bells, wherein all the courses of each peal do not agree in the afore-said three respects: For although as to the motion of the *whole-hunt* they do, yet in the motion of the rest of the notes, and consequently in the making of the changes they do not.

It being very difficult to begin the following peals with cross-hunts, that is, to make the

2d, 3d, 4th, &c. whole-hunts; I will therefore set down a general rule for making the first changes at the beginning of each Peal, wherein consists the great difficulty. In any Cross-peal the *whole-hunt* may move either up or down at the beginning; and the motion of the *whole-hunt* in the first course of each of the following peals will direct the first motion of any cross *hunt*, and consequently of making the first changes in that peal. For Example, admit the 4th were made the *whole-hunt* in the peal called *Old doubles and singles* upon five bells, and to *hunt* up at first: now to know how to make the first changes, observe how the change is made wherein the treble (which is there the *whole-hunt*) moves up out of the 4th place, and in the same manner must the change be made wherein the 4th bell also moves up out of that place: therefore as the change wherein the treble moves up out of the 4th place is a *single* behind; so likewise must the change wherein the 4th bell moves up out of that place, be also a *single* behind place, 12354; and then as the next change wherein the treble lieth still behind is double of the four first bells; so likewise the next change wherein the 4th bell lieth still behind, must also be made on the four first, thus, 21534, &c. Or admit the 4th

were to hunt down at the beginning, then observe how the change is made wherein the treble hunts down out of the 4th place, and so in like manner must the change be made wherein the 4th hunts also down out of that place: therefore as the change wherein the treble hunts down out of the 4th place, is double of the four first bells; so likewise must the change wherein the 4th bell hunts down out of that place, be also double of the four first thus, 21435; then as the treble makes a *single* when it moves down out of the 3^d place, so likewise must the 4th next make a single change in moving down out of the 3^d place thus 24135, &c. which observations will guide the making of the first changes in in any cross peal with any Hunts; but observe whensoever the first change of any peal happens to be single, it must be made at the back-stroke to prevent cutting compass; and the like when a double change happens first in a peal of Triples and Doubles. And moreover by the way observe, that all the following peals are so prick't, that in ringing them at half-pulls, if the first change of each peal is made at the fore-stroke, the single changes in each peal will always be made at the back-stroke; and also the double changes in Triples and Doubles, excepting some few Single

in

in two or three peals. But when it happens that the first change of a peal is made at the back-stroke, then consequently the bells at the end of the peal will come round at a fore-stroke change.

In such peals on five bells where *singles* are made in the 3^d and 4th places at the leadings of the *whole-hunt*, the *extreams* may there be made three ways in each peal; *viz.* every time the *half-hunt* lieth next the *whole-hunt*; secondly, every time it lieth behind; thirdly, every time the *half-hunt* lieth next the *whole-hunt*, and also behind: in this last way there are six *extreams* in each peal, but in other ways only three in each; the *extreams* being always made when the *whole-hunt* leads, and betwixt the two farthest *extreams* bells from the *half-hunt*.

In such peals upon five bells wherein there are three *extreams*, and made in the 3^d and 4th places at the leadings of the *whole-hunt*; the rest of the *singles* at the leadings of the *whole-hunt* may be made two ways in each peal; *viz.* either in the 2^d and 3^d, or the 4th and 5th places; if they are made in the 2^d and 3^d, then the *extreams* must be made when the *half-hunt* lyeth behind; but if the *singles* are made behind, then the *extreams* must be made when the *half-hunt* lieth next the *whole-hunt*,

hunt, the *extreams* being always made between the two next *extream* bells to the *half-hunt*.

In all the following peals the figures standing by themselves at the title of the peal, are the *hunts* in the peal there prickt: for instance, in the first *cross-peal* upon five bells call'd *Old doubles and singles*, the two figures standing thus 1 and 2, are the *hunts* in that peal; 1 is the *whole-hunt*, 2 the *half-hunt*, and the like of the rest.

All peals of *doubles* upon five bells, which go sixty changes compleat without any *singles*, by making of two *extreams* they will go 120. And also all peals of *doubles* upon six bells, and *triples* and *doubles* upon six, which go 360 changes without any *single* or *extreme*, by making of two *extreams* they will go 720. The *extreams* in all these compleat peals proceeding from one and the same cause, are therefore to be made after one manner, according to this general and infallible rule: Wheresoever any two of the *extream* bells are in course to make a change, those two bells by lying still will effectually make the *extream*. So that the making of the *extream* in *doubles* upon five bells, necessitates the making of a *single change* at the same time, by reason that the two *extream* bells which should

should contribute to the making of the *double* change, do lie still; so that the *single* change is accidental, and very improperly called the *extream*. When the *extreams* in *triples* and *doubles* upon six bells are made at *double* changes, then there happens two *singles* in the peal; but when they are made at *triple* changes, then those two changes will become *double*, and consequently the 720 will then go compleat without any *singles*. Upon five bells the first *extream* must be made within sixty changes from the beginning, and the second *extream* just sixty changes from the first. Upon six bells the first *extream* must be made within 360 changes from the beginning, and the second *extream* just 360 changes from the first. The easiest way in practice, is to make the *extremes* at the leadings of the *whole hunt*; wherein it may be observed as a general rule, That in all peals upon six bells, where the *half hudd* dodgeth behind at the *bob*, there the first *extream* may be made either the first, second, or third time; the *half* and *quarter hudds* dodg together behind, and then the second *extream* must be made the third time those two bells dodg again together behind, after the first *extream* is made. And also in all such peals upon six bells, where the *doubles* at the leadings of the *whole*-

whole-hunt are made on the four middle bells, there the first *extream* may be made either the first, second, or third time the *half* and *quarter-hunts* do make a change in the 2d and 3d places, and then the 2d *extream* must be made the third time those two bells come there again to make a change after the first *extream* is made. The *singles* at all these *extreams* must be made by the *half* and *quarter-hunt*. The first *extream* in any peal may also be made at any place, where two of the *extream* bells are in course to make a change according to the preceding general rule; and then the making of the second *extream* may be guided by observations taken from the changes at the leadings of the *whole-hunt*: for at the leadings of the *whole-hunt* the *half* and *quarter-hunts* always come together to make a change in one place, just at 120 changes distance from one another throughout each peal. Now as the second *extream* must be made just 360 changes from the first, so the making of it may thus be guided: Look how many changes, or else how many leadings of the *whole-hunt* the first *extream* is made after the *half* and *quarter-hunts* have made a change together, so many changes or leadings of the *whole-hunt* must the second *extream* be made, after the third following time that those two bells

bells do make a change in the same place again. And likewise in all peals, where there are single and double *bobs*, the same observations will also hold good, in making the *extreams* either after the single or double *bobs* as before; there being likewise 120 changes distance between the single *bobs* and also between the double *bobs*: so that if the first *extream* is made at a single *bob*, the second must then be made at the third following single *bob*, and the like also at double *bobs*. And such kind of observations, according to the nature of the peal, will guide the making of the second *extream* in any peal, either upon five or six bells. Wherein 'tis observable, that the second *extream* must always be made by the same two bells, and in the same place where the first was made, which two bells will in course lie apt for that purpose; and the rest of the bells will also in course lie in the same places at the second *extream* where they lay at the first. After the making of the first *extream*, the method of the peal goeth on as if no *extream* had been made; and also after the making of the second *extream* if any remaineth, it also goes on, until in course the bells come round.

In all compleat peals of *doubles* upon six bells there may also moveable *extreams* be made,

made, which are made according to this rule; wheresoever any two of the *extream* bells are together, and in course to lie still, those two bells by making a change will thereby make the *extream*, which is as effectual as the fixed *extream*, the reason and ground of both being one and the same. There are also two of these *extreams* in each peal, and the second always made 360 changes from the first, and the making of it guided by such kind of observations as before. When moveable *extreams* are made, then there will be two triple changes in the 720; but when fixed *extreams* are made, then two *singles*.

The art of *cross-pricking* may receive a being from this consideration. As every compleat peal of plain changes upon one number comprehends the compleat peals on all lesser numbers; so likewise every compleat *cross-peal* must of necessity do the like, although their cross course permits it not to be done so regularly and demonstrably as the former. From whence may be inferr'd, that every note in a *cross-peal* must of necessity lie as many times in one place, as the rest of the notes are capable of making changes; and also that two or more of the notes must jointly lie in the same places as many times, as the remaining number are also capable of making changes;

ges: this being a certain touchstone to prove all *cross-peals* after they are prickt, and must be held as a principle on which to ground such methods of pricking, that the course of all the notes may demonstrably tend to produce those effects. And from hence it is, that the whole *hunt* immediately derives the manner of its uniform motion through the courses of each peal. And the changes in every course are as so many guides to conduct the rest of the notes in such sort, that they may be prepared to lie at the last change of the course in apt places for each succeeding course to receive them, and to perform the like. Now as the changes in all the courses of a peal are made alike, except as before; so in the composing of *cross-peals*, by pricking of one course may soon be discovered, whether or no a compleat Peak will from thence arise.

Cross

Cross Peals.

The Twenty four, Doubles and Singles on four Bells;

THis peal consists equally of *double* and *single* changes; one change is *double*, the next *single*, and so throughout. 1 is here the *hunt*, and 2.3.4 *extream* bells. Every *double* change is made on the two first and two last bells, and every *single* on the two middle bells, except when the 1 leads, and then behind which is call'd *extream*. All the bells have a direct Hunting-course up and down until 1 leads, and then the bell in the second place lyeth still, whilst the two hind-bells make a *dodg*; which being made, all the bells proceed again in their Hunting course. The three changes of (*a.b.c*) are the three *extream* changes.

There are three ways to make the *extream* changes. First, every time the c

1234
2143
2413
4231
4321
3412
3142
1324
1342
3124
3214
2341
2431
4213
4123
1432
1423
4132
4312
3421
3241
2314
2134
1243
1234

the *hunt* leads, as in the peal here prickt; secondly, every time it lies behind; thirdly, every time it leads and lies behind: in this last way there are six *extream* changes in the peal, but in the other two ways, only three *extreams*; the *extream* changes must always be made betwixt the two farthest bells from the *hunt*. Any bell may *hunt* at pleasure, and it may move either up or down at the beginning of the peal. If the 1 or 3d do *hunt* down, or the 2d or 4th up at the beginning, the first change must be *single*, and made of the back-stroke (if 'tis rung at half-pulls) to prevent cutting compass; but if either of those bells do *hunt* the contrary way, then the first change must be double.

Old Doubles and Singles.

1 and 2.

ONE change is *double*, the next *single*, and so by turns. The treble hath a direct hunting course, as in plain changes. Every *double* change is on the four first bells, and the treble is one of the two bells that makes every *single* change, except when it leads, and then the *single* is in the 3d and 4th

H

place

places; but when 2 lies next the treble, then the *single* is behind, which is call'd *extream*. Every time the treble leaves leading, the two first bells continue slow dodging, untill the treble comes down and displaceth them. And when the treble moves down out of the 5th place, the bell that comes into it lies still there, untill the treble comes thither again, except when the *extream* change is made behind. Every bell lies twice together in the 3d and 4th places, except when the treble leads, and also when it hinders them in hunting.

This old peal may be rung by a new course, which differs from the former only in the *single* changes that are made e-

very time the *whole-hunt* leads, viz. Every *single* may be made either in the 2d and 3d, or 4th and 5th places. If they are made in the 2d and 3d, then the *extreams* must be made when the *half-hunt* lies behind; but if they are made in the 4th and 5th places, then the

12345	51432	—
21435	15342	12543
24135	15432	Extre.
42315	—	12534
42351	13254	—
24531	13524	13425
24513	—	13245
42153	12435	—
41253	Extre.	14532
14523	12453	14352
14253	—	—
41523	15324	15243
45123	15234	15423
54213	—	—
54231	13452	12354
45321	13542	Extre.
45312	14235	12345
54132	14325	—

the *extreams* must be made when the *half-hunt* lies next the *whole-hunt*, the *extreams* being always made in the 3^d and 4th places.

London Paradox.

1 and 2.

ONE change is *double*, the next *single*, and so by turns. The motion of the treble is after this manner; in hunting up, first, it makes a *dodg* in the 2^d and 3^d places, then it lies twice in the 4th place, and four times behind; in which manner also it hunts down again, and then leads four times. The rest of the bells have a like course and motion with that of the treble, untill the treble leads. Now 'tis observable, that every *single* change is made in the 2^d and 3^d places until the treble leads, and then in the 3^d and 4th places; but when 2 lies next the treble, then an *extream* behind. The changes

12345	Extre.
21435	12453
24135	—
21453	14235
24153	14325
42513	13452
45213	13542
42531	—
45231	15334
54321	15234
53421	12543
54312	Extre.
53412	12534
35142	—
31542	15243
35124	15423
31524	14532
13254	14352
13524	—
15342	13425
15432	13245
—	12354
14523	Extre.
14253	12345
12435	—

at the leadings of the *whole-hunt* have an absolute dependency upon the course of the *twenty four* changes, *doubles* and *singles* upon four bells; and the *extreams* to be made as many ways as in that peal, which are here guided by the motion of the *half-hunt*.

Phoenix

5 and 4.

ONE change is *double*, the next *single*, and so by turns. Every bell leads twice, and lies behind four times. Every *single* is made in the 2^d and 3^d places, until the 5th comes behind, and then in the 3^d and 4th places; but when the 4th leads, (the 5th being behind) the *single* is in the 2^d and 3^d places.

12345	54123
21354	51423
23154	15432
32513	14532
35214	41352
53241	43152
52341	34125
25431	34215
24531	43125
42513	41325
45213	

London pleasure.

1 and 2.

THIS peal in the former printing of it was prickt another way, but I have here

here transposed that Course, which in my opinion renders it more easie and practical.

12345	23154	35142	15432
21345	21354	35412	
23145	12354	35421	14532
32145	13254	53421	14523
31245	13524	53412	14253
31425	13542	53142	12453
34125	31542	51342	12435
34215	31524	15342	14235
34251	31254	15324	14325
32451	32154	15234	14352
32415	32514	12534	
23415	32541		13452
23451	35241	12543	13425
23541	35214	15243	13245
23514	35124	15423	12345

Mr. Tendring's Peal, call'd
Grand Paradox.

I and 5.

ONE change is *double*, the next *single*, and so by turns. The motion of the *whole-hunt* is after this manner: first, it moves up into the 2^d and 3^d places, lying twice in each; then it moves up and makes a dodg behind, and then lieth still one change in the

5th place; then it makes another dodg behind, and so moves down into the 3d and 2d places lying twice in each as before, and then leads four times. Every other bell hath a like course and motion with that of the treble until the leadings of the treble, and then observe, that every time the treble goeth to lead and leaves leading, the *double* change is made on the two first and two last bells, except when it goeth to lead if the *half-hunt* lies next it, and then not. Every bell leads four times, and every *single* is made behind. The change wherein each bell leaves leading, is always made on the four first bells, except as before.

<u>12345</u>	45321	21534	43152	13524	14523
21354	45312	25143	43125	13542	—
21345	54132	25134	41352	—	13254
23154	54123	52314	41325	12453	23245
23145	51432	52341	14352	12435	12354
32415	51423	53214	14325	14253	12345
32451	15243	53241	13452	14235	—
34215	15234	35421	13425	—	—
34251	12543	35412	—	15432	—
43521	12534	34521	15324	15423	—
43512	21543	34512	15342	14532	—

What

What you please, *Doubles and Singles.*

EVery bell leads four times, and lies behind twice, except when the *extream* is made behind; and twice in the second place, except when the *extream* is made before: and note, when the treble is before the fourth stroke, the *single* is in the 2d and 3d, the next time the *single* is behind; but at other times the *single* is in the 3d and 4th places. When any bell leaves leading the *double* change is on the two first and two last, and the *extreams* are made by turns, first behind, then before, and so on to the end, for there are six *extreams*.

12345	34521	21435	45231	14352	14235
21354	34251	21345	54213	14532	14325
21534	43215	23154	54123	15423	13452
25143	43125	23514	51432	extre.	extre.
25413	41352	32541	51342	15432	13425
52431	41532	32451	15324	13254	—
52341	14523	34215	15234	13524	12534
53214	14253	34125	12543	15342	12354
53124	12435	43152	extre.	extre.	13245
35142	extre.	43512	15243	13542	extre.
35412	12453	45321	—	—	12345

Old Doubles.

1. and 2.

THE changes are all *double*, except one *single* every time the treble leads. The treble hath a perfect hunting course as in plain changes, and every other bell hath a like hunting course with that of the treble until the treble leads, and then a *single* is made in the 3^d and 4th places; but when the 2 lies next the treble, the *single* is behind which is call'd *extream*.

12345	13254	51432	12453	15234	14532
21435	13524	15342	—	—	14352
24153	31254	15432	14235	12543	—
42513	32145	—	14325	<i>extre.</i>	13425
45231	23415	14523	—	12534	13245
54321	24351	14253	13452	—	—
53412	42531	—	13542	15243	12354
35142	45213	12435	—	15423	<i>extre.</i>
31524	54123	<i>extre.</i>	15324	—	12345

New Doubles.

1 and 2.

THE changes are all *double*, except one *single* at every leading of the treble. The tre-

treble hath a perfect hunting course as in plain changes; and when it moves up from leading, the two first bells dodg untill it comes down again and displaceth them. Every bell that comes into the 3^d place lies there twice, and then moves up behind; but the bell which lies there when the treble leaves leading, moves down. Every bell lies twice behind, except at the changes wherein the treble goeth to lead and leaves leading. Every time the treble leads, a *single* change is then made in the 3^d and 4th places; but when the 2 lies next the treble, an *extream* behind.

12345	13254	51324	12453	—	14352
21354	13524	15342	—	12543	—
23145	31542	15432	14235	extre.	13425
32415	35124	—	14325	12534	13245
23451	53214	14523	13452	—	—
32541	35241	14253	13542	15243	12354
23514	53421	—	15342	15423	extre.
32154	35412	12435	15324	—	12345
31245	53142	extre.	15234	14532	—

Reding Doubles.

1 and 2.

THE treble hath a direct hunting course as in plain changes, and when it moves up from leading the two first bells dodg until it comes

comes down again and displaceth them; and whilst they dodg before, every bell that comes down into the 3^d place lies there twice, and then moves up again behind. But after the dodging all the bells go a direct hunting course up and down, until the dodging again hindreth them as before. Every bell lies twice behind, except when the treble leaves leading if the 2^d lies next it, and then the *double* is made on the two first and two last bells; by which means the two hind-bells then make a dodg., which happens in course once in twenty changes, that is, every second time the treble leaves leading. By this method it will go sixty changes, and then an *extream* must be made. The *extreams* in this peal may be made according to the preceding general rule set down in the *Introduction*. Here the first *extream* is made at the end of sixty changes, the bells lying 1 3 2; and when they come to lie so

12345	12534	12354
21354	31543	—
23145	25134	13524
32415	52314	15342
23451	25341	—
32541	52431	14253
23514	25413	12435
32154	52143	—
31245	51234	14325
13425	15324	13452
14352	13542	—
41532	—	15234
45123	14235	12543
54213	12453	—
45231	—	15423
54321	14523	14532
45312	15432	—
54132	—	13245
51423	13254	<i>extre.</i>
15243	<i>extre.</i>	12345

so again, the second *extream* must be made; the *extream* is made behind; two of the *extream* bells lying there, and the *single* is made in the 2^d and 3^d place at both the *extreams*.

Grandfire.

1 and 5.

THE treble hath a direct hunting course as in plain changes, and every other bell hath also a like hunting course with that of the treble except when the *bobs* hinder. The *bobs* are double changes, and made on the two first and two last bells according to this rule, *viz.* every time the *treble* goes to lead and leaves leading, a *bob*-change is then made, except the 5th lying next it makes a change there with it, and then not. Now 'tis observable, that once in twenty changes, that is, at every second leading of the treble, the 5th lies next it, and consequently there is but one *bob*-change then to be made, but at other times two; so that at one leading of the treble there is but one *bob*-change made, at the next leading there are two, and so successively by turns, which for distinction may be call'd *single* and *double bobs*. The two bells that doddg behind at a *bob* continue there doddg.

dodging until the treble comes up and displaceth them, and at every *bob-change* the bell in the 3^d place lieth still, and then moves down to lead. By this method it will go sixty changes; and to carry on the course *extreams* must be made, there being two in the peal. The manner of making an *extream* I have at large shewed in the *Introduction*, and the *extreams* may here be made in any place according to the general rule there set down. The easiest way in practice is to make them at the leadings of the treble; at any single *bob* it may be made behind, two of the *extream* bells lying there, and to lie still whilst the bells in the 2^d and 3^d places do make the *single change*: at any double *bob* it may be made in the 2^d and 3^d places, so that the *single* must there be made behind.

12345	52143	52431
21354	51234	25341
23145	15324	23514
32415	13542	32154
34251	31524	31245
43521	35142	13254
45312	53412	<i>extre.</i>
54132	54321	13245
51423	45231	—
15243	42513	15342
12534	24153	13524
21543	21435	—
25134	12453	14253
52314	14235	12435
53241	41253	—
35421	42135	15234
34512	24315	12543
43152	23451	—
41325	32541	13452
14352	35214	14325
13425	53124	—
31452	51342	15423
34125	15432	14532
43215	14523	—
42351	41532	12354
24531	45123	<i>extre.</i>
25413	54213	12345

If the first *extream* is made at the single *bob*, the second must be made at the third following single *bob*; or if the first is made at a double *bob*, the second must be made at the third double *bob* following, as in this peal here prickt, where the first *extream* is made at a double *bob*, and the second also made at the third following double *bob*.

This peal will go with any *hunts*, and to begin it on the four hind bells; but then in ringing it at half-pulls, the first change being made at back-stroke to prevent cutting compass, the bells at the end of the peal will come round at a fore-stroke change. Therefore the better way is to begin it on the four first bells, which may also be done with any *hunts*, excepting 1.3, 1.5. and 2.3, 2.4, 2.5, wherein the first change of each may be a *bob*. And observe, that in any way of beginning it, the bells must all proceed in such a perfect hunting course as the first change directs them, until the first *bob* comes to be made.

Old Triples and Doubles.

ONE change is *triple*, the next *double*, and so by turns, except one *single* at the end of every sixty changes. Every *triple* change

change is made on the two first, the two middle, and two last bells; and every *double* is made on the four middle bells, except when the *hunt* leads and then on the four hind bells. Treble is here the *hunt*, and hath a direct hunting course up and down as in plain changes; the rest of the bells have also a direct hunting course up and down except when the treble leads, and then each bell that was hunting up (except that in the 2^d place) makes a dodge with the next bell below it, and then proceeds forward again in its course up; and each bell which at the same time was hunting down, makes a dodg with the next bell above it, and so proceedeth forward in its course down; which method will carry on the peal five *courses* of the *hunt*, that is sixty changes as they are here prickt,

In the 120 there is also a *half-hunt*; and when the *whole-hunt* leads and the *half-hunt* lies next it, a single change must then be made, either in the 3^d and 4th, or 5th and 6th places; but observing when the *half-hunt* comes again to lie next the *whole-hunt*, another single change must be made in the

123456	135264
214365	312546
241635	321456
426153	234165
462513	243615
645231	426351
654321	462531
563412	645213
536142	654123
351624	561432
315264	516342
132546	153624

same

same place where the first was made. These single changes are called *extreams*, there being two in every *fixscore*, and the last of them always falls out in course to be made just 60 changes from the first, that is, at the fifth leading of the whole *hunt* after the first *extream*.

In the 240 there is also a *half-hunt*; and when the *whole-hunt* leads, and the *half-hunt* lies next it, a single change being then made in the 4th and 5th places, will bring the bells round at *twelvescore*, there being four *singles* in the peal, one of which falls in the course at the end of every sixty changes.

In the 720 there is a whole, half, and quarter *hunt*, and every time the *whole-hunt* leads and the *half-hunt* lies next it, a single change must then be made in the 4th and 5th places as in the *twelvescore*; but when the *quarter-hunt* lies next the *half-hunt*, that is, when the three *hunts* come together before, (which always happen at the end of every *twelvescore*) then the *single* must be made behind, which is call'd *extream*, there being three of them in the peal.

156342	325461
513624	234516
531264	243156
352146	421365
325416	412635
234561	146253
243651	142635
426315	416253
462135	461523
641253	645132
614523	654312
165432	563421
164523	536241
615432	3352614
651342	325164
563124	231546
536214	213456
352641	124365

The *sevenscore and four* triples and doubles are the same with the former except at the leadings of the treble, and then a *single* is always made in the 3^d and 4th places; but when the 2 lies next the treble, an *extream* is made in the 4th and 5th places. This peal is grounded on the *twenty four* doubles and singles, the four middle bells making them at the leadings of the treble.

Grandfire Bob,

1, 2 and 4,

THE general method of this peal is the same with that next before, but with this difference; whereas in that peal *singles* were made at the end of every sixty changes to carry on the course, in this there are *double* changes made in their stead, which are called *Bob*-changes, and made when the treble leads in the 2^d and 3^d and the 5th and 6th places, whereas at other times the *double* is there made on the four hind bells,

The Practitioner may observe these rules in the ringing of it, viz. whatsoever bells he followeth when he hunteth up, he must follow the same bells again, and in the same order, the next time he hunts down, as in these
chan-

changes here prickt, where the treble in hunting up first follows 2, then 4, and then 6; and when it comes behind, first it follows 2 again, then in its hunting down it follows 4 and 6 in the same order as when it hunted up; which is also observed in the ringing of any other bell, but with this difference betwixt the *whole-hunt* and the rest of the bells, viz. Every time the *whole-hunt* leaves the *treble's* place and hunts up, it followeth different bells from what it did in its former hunting up, as may be seen in this example: where in its first hunting up it first follows 2, then 4, then 6; whereas in the next hunting up it first follows 3, then 2, then 4. But the first time any other bell leads after a *bob*, whatsoever bells it then follows in its hunting up, it follows the same bells likewise and in the same order every time it hunts up, and consequently every time it hunts down unto the next *bob*; as in this example, where 2 in its first hunting up, first follows 4, then 6, then 5, and likewise when it next hunts up it follows 4 6 5 as before, &c. But when the *whole-hunt* is the second bell which he follows in hunting up,

123456
214365
241635
426153
462513
645231
654321
563412
536142
351624
315264
132546
135264
312546
321456
234165
243615
426351
462531
645213

he must follow it again when he next lies behind.

'Tis observable, that at every leading of the treble the two hind bells dodg; and whensoever the *half-hunt* dodgeth there, a *bob* must then be made, except the *quarter-hunt* dodgeth there with it, and then not; which is an infallible rule, by which he that rings the *half-hunt* may always give notice of the *bobs* as well when the peal is inverted, as in the ordinary way of ringing it. The *bobs* fall out in course single and double, the one single, the next double; and so by turns; there being three single *bobs* and three double *bobs* in the *eightenscore*, and consequently six of each in the 720.

The aforesaid method being observed, will carry on the course of the peal to the end of *eightenscore*, which is just half the 720, and then it terminates, as appears in the *eightenscore* here prickt: but by making an *extream* that number may be doubled; for then *eightenscore* changes more will go in course according to the former method; and another *extream* being likewise made at the end of the last *eightenscore* will compleat the 720. The manner of making an *extream* I have shewed at large in the *Introduction*, pag. 90. where I have also set down a general rule for

for making them, to which I refer.

The first *extream* may be made either the first, second, or third time that the half and quarter *hunts* dodg behind; or else at the first, second, or third single *bob*; at either of which places the *single* must be made behind.

123456	325416	342516	143526	
214365	234561	324156	<i>bob.</i>	124536
241635	243651	231465	134562	125463
426153	426315	213645	315426	
462513	462135	126354	351246	152643
645231	641253	123645	532164	156234
654321	614523	216354	523614	
563412	165432	261534	256341	165324
536142	<i>bob.</i>	625143	265431	163542
351624	156423	652413	624513	
315264	514632	564231	642153	136452
132546	541362	546321	461235	<i>bob.</i>
135264	453126	453612	416325	163425
312546	435216	435162	143652	
321456	342561	341526	<i>bob.</i>	136245
234165	324651	314256	134625	132654
243615	236415	132465	316452	
426351	263145	134256	361542	123564
462531	621354	312465	635124	125346
645213	612534	321645	653214	
654123	165243	236154	562341	152436
561432	162534	263514	526431	154263
516342	615243	625341	254613	
153624	651423	652431	245163	145623
156342	564132	564213	421536	<i>bob.</i>
513624	546312	546123	412356	154632
531264	453621	451632	143265	
352146	435261	415362	142356	145362

<i>bob.</i>	— — —	<i>bob.</i>	— — —	146532
154326	162345	135426	162453	<i>bob.</i>
— — —	163254	— — —	164235	164523
145236	— — —	153246	— — —	— — —
142563	136524	152364	146325	146253
— — —	135642	— — —	<i>bob.</i>	142635
124653	— — —	125634	164352	— — —
126435	153462	126543	— — —	124365

Here are *eighteenscore* changes wanting one, which one if it were made double as the former, would bring the bells round, therefore an *extream* must be made as in this change 123465, the two hind bells making the *extream*, and the bells in the 3^d and 4th places making the *single*. Now in regard that this *extream* is made the second time the *whole-hunt* leads after a double *bob*, therefore the second *extream* must be made the second time the *whole-hunt* leads after the third double *bob* following.

This peal may be rung with any *hunts*, and to begin the changes *triple* and *double* as in this here prickt.



Fifty three LONDON-Peals upon Five, Six, Seven, and Eight Bells, composed by F. S.

Crambo.

THE changes are all *single*; it hath a perfect course, and may be prickt many ways.

12345	42513	52431	32154	35421	15243
21345	45213	25431	23154	35412	51243
21435	45231	25413	23145	53412	51234
24135	54231	25143	32145	53142	15234
24153	54321	52143	32415	35142	15324
42153	45321	52134	23415	35124	13524
42135	45312	25134	23451	53124	13542
42315	54312	25314	32451	51324	31542
24315	54132	52314	32541	51342	31524
24351	45132	52341	35241	15342	31254
42351	45123	25341	35214	15432	13254
42531	54123	23541	53214	51432	13245
24531	54213	23514	53241	51423	31245
24513	52413	32514	53421	15423	31425

13425

13425	34215	43152	41523	12453	12354
13452	34251	41352	14523	21453	12345
31452	43251	41325	14253	21543	
34152	43521	14325	41253	12543	
34125	34521	14352	41235	12534	
43125	34512	14532	14235	21534	
43215	43512	41532	12435	21354	

The Primrose.

I and 2.

THE treble hath a perfect course as in plain changes. And when it hunts up out of the 2^d place it makes two *singles* together, and the like when it hunteth down. When it leads, the *single* is in the 3^d and 4th places, except when 2 lies next it, and then an *extream* behind. Every bell (except the treble) leads four times, and lies still behind untill the treble displaceth it, except at the *extream*.

12345	51432	15234
21435	15342	—
24135	15432	12543
24315	—	Extr.
23451	14523	12534
32541	14253	—
35214	—	15243
35124	12435	15423
31524	Extr.	—
13254	12453	14532
13524	—	14352
31254	14235	—
32154	14325	13425
32514	—	13245
35241	13452	—
53421	13542	12354
54312	—	Extr.
54132	15324	12345

New

Orphens.

12345	14253	34125	54312	32541	52134
13254	41523	43152	53421	23514	51243
13245	41532	43125	53412	23541	51234
31254	45123	34215	35421	25314	15243
31245	45132	34251	35412	25341	15234
32154	54123	32415	53142	52314	12543
32145	54132	32451	53124	52341	12534
23154	51423	23415	51342	25431	21543
23145	51432	23451	51324	25413	21534
21354	15423	24315	15342	24531	12354
21345	15432	24351	15324	24513	12345
12435	14523	42315	13542	42531	
12453	14532	42351	13524	42513	
21435	41352	43215	31542	45231	
21453	41325	43251	31524	45213	
24135	14352	34521	35142	54231	
24153	14325	34512	35124	54213	
42135	13452	43521	53214	52431	
42153	13425	43512	53241	52413	
41235	31452	45321	35214	25143	
41253	31425	45312	35241	25134	
14235	34152	54321	32514	52143	

One change is *double*, the next *single*, and so by turns.

New Doubles and Singles.

1 and 2.

ONE change is *double*, the next *single*, and so by turns. The treble hath a direct hunting course up and down as in plain changes, and every time it goeth to lead and leaves leading, the change is *double* on the two first and two last bells, the rest of the *double* changes are on the four first. The treble is one of the two bells that makes every *single* change except when it leads, and then the *single* is made in the 3^d and 4th places; but when the 2 lies next the 1, then an *extream* is made behind. When the treble leaves the two first bells, they continue slow dogging until treble comes down and displaceth them. Every bell (except the treble) lieth twice in the 3^d place.

12345	51324	15234
21354	15342	—
23154	15432	12543
32514	—	Extre.
32541	14523	12534
23451	14253	—
23415	—	15243
32145	12435	15423
31245	Extre	—
23254	12453	14532
13524	—	14352
31542	14235	—
35142	14325	13425
53412	—	13245
53421	13452	—
35241	13542	12354
35214	—	Extre.
53124	15324	12345

The

The Morning Star.

I and 2.

THE treble hath a direct hunting course as in plain changes; and every time it hunts up, it makes two *singles* together, and the like when it hunts down: when it leads the *single* is behind, but when 2 lies next it an *extream* is made in the 3^d and 4th places. Every time the treble goeth to lead and leaves leading, the double is on the two first and two last bells, and every bell except the treble leads four times together.

12345	51432	14523	15243	—
21354	54132	14532	—	14253
23154	54312	—	13425	14235
23514	53421	12354	13452	—
25341	35241	<i>extre.</i>	—	15324
52431	32514	12534	12543	15342
54213	32154	—	<i>extre.</i>	—
54123	31254	14352	12453	12435
51423	13245	14325	—	<i>extre.</i>
15432	13254	—	13542	12345
15423	—	15234	13524	—

The

The Quirister.

I and 2.

THis peal consists most of *double* changes; the treble hath a direct hunting course as in plain changes, and every time it hunts up and down it makes a *single* in the 3^d and 4th places; and when it leads, the *single* is behind, but when 2 lies next it an *extream* is made in the 3^d and 4th places.

When the treble leaves the two hind bells, they continue dodging untill it comes up again and displaceth them, and then they hunt directly down; the first to lead, and the other into the 2^d place: that which moves to lead, having lead four times, gives place to the treble; but

12345	32514	15234
21354	35241	15243
23145	53421	—
23415	54312	14352
24351	54132	14325
42531	51423	—
45213	15432	12543
45123	15423	extre.
41532	51432	12453
14523	54123	—
14532	54213	15324
41523	52431	15342
45132	25341	—
45312	23514	14253
43521	23154	14235
34251	21345	—
32415	12354	13542
32145	extre.	13524
31254	12534	—
13245	—	12435
13254	13425	extre.
31245	13452	12345
32154	—	—

when

when the Treble hath done leading it takes the treble's place again, and leads four times more and then hunts directly up; the other bell which moved down into the 2^d place lies there twice, and then the Treble in hunting down moves it into the 3^d place where it lies still, untill the Treble in hunting up moves it back into the 2^d place, where having lain twice it hunteth up. This Peal is as musical, easie, and practical as any of this kind that ever was prickt.

The Faulcon.

1 and 2.

THis Peal consists most of *double* changes. The treble hath a direct hunting course as in plain changes, and every time it hunts up and down it makes a *single* in the 3^d and 4th places, and when it leads a *single* is also made there, but when 2 lies next it the *extream* is made behind. When the treble leaves the two first bells they continue there until it comes down again and displaceth them, but observe, when the treble moves into the 5th place, and again from thence, the *double* is on the two first and two last bells, by means of which the two first bells then dodg,

dodg, but before and after they lie still. Every bell lies twice in the 3^d place and then hunts up, except that which lies there when the treble leaves leading.

12345	53241	— —	15243
21354	35421	14235	15423
23145	53412	14325	— —
23415	53142	— —	14532
32451	51324	13452	14352
23541	15342	13542	— —
32514	15432	— —	13425
32154	— —	15324	13245
31245	14523	15234	— —
13254	14253	— —	12354
13524	— —	12543	<i>extre.</i>
31542	12435	<i>extre.</i>	12345
35124	<i>extre.</i>	12534	— —
35214	12453	— —	— —

Merry Andrew.

1 and 2.

ONE change is *double*, the next *single*, and so by turns. The treble leads four times, lies behind four times, and twice in every other place. Every other bell leads four

Every four times. When the treble leaves the two hind-bells they continue dodging untill it comes up again and displaceth them. Every single is made behind until the treble hinders, and then in the 2^d and 3^d places. When the treble leads and the 2^d lies next it, then an extreme is made in the 3^d and 4th places.

When the treble goes to lead and leaves leading, the *double* is on the two first and two last bells, and when every other bell goes to lead and leaves leading, the *double* is on the four first.

<u>12345</u>	51423	23514	15243
21354	15432	32154	15234
21345	15423	32145	12543
23154	14532	31254	<i>extre.</i>
23145	14523	31245	12453
32415	41532	13254	————
34215	41523	13245	13542
32451	45132	12354	13524
34251	45123	<i>extre.</i>	15342
43521	54213	12534	15324
45321	52413	————	————
43512	54231	14352	14235
45312	52431	14325	14253
54132	25341	13452	12435
54123	23541	13425	<i>extre.</i>
51432	25314	————	12345

May-day.

1 and 5.

ONE change is *double*, the next *single*, and so by turns. When the treble goes to lead and leaves leading, the *double* is on the two first and two last bells; and when every other bell goes to lead and leaves leading, the *double* is on the four first.

The treble hath a constant dodging course, for in its hunting up it first makes a dodg in the second and third places, and then another behind, and then it lies still one change in the 5th place; then in its hunting down it makes another dodg behind, and also another in the 2d and 3d places, and then leads four times.

So that the treble is one of the two bells that makes every *single* until it leads, and then 'tis made in the 2d and 3d pla-

12345	45132	12543
21354	41523	15234
23154	45123	12534
21345	54213	---
23145	54231	14352
32415	52413	13452
32451	52431	14325
34215	25341	Extre.
34251	25314	14235
43521	23541	---
43512	23514	15324
45321	32154	13524
45312	31254	15342
54132	32145	13542
51432	31245	---
54123	13254	12453
51423	12354	14253
15432	13245	12435
14532	Extre.	Extre.
15423	13425	12345
14523	---	---
41532	15243	---

places, except when the 5th lies behind, and then an *extream* is made in the 3^d and 4th places. When the treble leaves the two hind-bells they continue slow dodging, until it comes up again and displaceth them. Every bell leads four times.

St. Dunstan's Doubles.

1 and 2.

THE changes are all *double* except one *single* every 2^d time the treble leads, there being six in the peal. The treble is a perfect *hunt*; and every time it goeth to lead and leaves leading, the *double* is made on the two first and two last bells, at which changes the bells in the 3^d place lie still and then move down, and the two hind-bells at the same time dodg: but at other times all the bells have a direct hunt-

12345	13245	12453
21354	—	—
23145	15423	13542
32415	14532	15324
34251	—	—
43521	12354	14235
45312	<i>extre.</i>	<i>single.</i>
54132	12534	14253
51423	—	—
15432	14352	13524
14523	13425	15342
41532	—	—
45123	15243	12435
54213	<i>single.</i>	<i>Extre.</i>
52431	15234	12345
25341	—	—
23514	14325	—
32154	13452	—
31245	—	—
13254	12543	—
<i>single.</i>	<i>extre.</i>	—

ing course. When the treble leads, and the 2d lieth either in the 2d or 3d places; then a *single* must always be made betwixt the two next *extream* bells to the 2d.

Church Doubles.

1 and 2.

THE changes are all *double* except six *singles* as the former. The treble is a perfect *hunt*; and every time it moves up into the 5th place, and also out of it, the *double* is then made on the two first and two last bells, at which time the bells in the 3d place do lie still and then move up; and the two first bells at the same time *dodg*. When the treble leads, and the 2d lieth either in the 2d or 3d places, then a *single* must always be made betwixt the two next *extream* bells to the 2d.

12345	13254	14325
21435	<i>single.</i>	—
24153	13245	12543
42513	—	<i>Extr.</i>
24531	14532	12453
42351	15423	—
24315	—	15324
42135	12354	13542
41253	<i>Extr.</i>	—
14523	12534	14235
15432	—	<i>single.</i>
51342	13425	14253
53124	14352	—
35214	—	15342
53241	15243	13524
35421	<i>single.</i>	—
53412	15234	12435
35142	—	<i>Extr.</i>
31524	13452	12345

In this and the former peal the *singles* may be

be made in another manner, *viz.* when the *whole-hunt* leads, and the *half-hunt* lieth either in the 4th or 5th places, a *single* must then be made betwixt the two next bells to the *half-hunt*; but at other times a *double* change to be made when the *whole-hunt* leads, as in the former way.

Stedman's Principle,

THE changes are all *double*, two *singles* excepted. One *double* is made on the two first and two last bells, the next on the four last, and so by turns successively; excepting every sixth change, which is *double* on the four first bells, and for distinction is called a *Parting* change. All the bells have a like course. The general method is this; the three first bells go the *six* changes, and the two hind-bells in the mean time *dodg*; then a *Parting* change is made which parts the two hind-bells, moving that in the fourth place down into the 3^d, and that in the 3^d place up into the 4th, and then the three first bells go the *six* again, the two hind-bells in the mean time *dodging* as before; and then another *Parting* change is made, and so successively on. Every bell that comes behind

continues there dodging six changes with one bell and six with another, and then in course the *Parting* change brings it down. One *six* cuts compass, the next doth not, and so by turns successively. In the *six* which cut compass the two first bells of the three makes the first change of it, but in the other the two last of the three. By this method the peal will go sixty changes, and to carry it on farther *extreams* must be made. An *extream* is made by the lying still of two bells when in course they should make a change, as before I have shewed more fully in the *Introduction*, pag. 90. but withall observing, that whereas in this peal the bells have all a like course, therefore they may all be termed *extream* bells, and consequently the *extreams* to be made according to this general rule, viz. the first *extream* may be made by any two bells that are in course to make a change within the compass of the first sixty changes of the peal; and the second *extream* must be made according to this rule, Whatsoever two bells are dodging behind at the first *extream*, when the same two bells come to dodg there again, is a certain warning for the second *extream* to be then made. And observe, how many changes the first *extream* is made from a *parting* change; so many likewise must the last

extream be made after a *Parting* change also.
And the *single* and *extream* comes in course

12345	42135	52431	24513	51324
11354	41253	25341	42153	15342
23145	14523	52314	24135	13524
32415	41532	53241	21453	31542
23451	45123	35214	12435	35124
24315	54132	32541	14253	53142
42351	51423	23514	41235	35412
43215	15432	32154	14325	34521
34251	51342	31245	13453	43512
43521	53124	13254	31425	45321
45312	35142	<i>extre.</i>	34152	54312
54321	31524	13245	43125	53421
53412	13542	31254	41352	35241
35421	15324	32145	14532	53214
34512	51234	23415	41523	52341
43152	15243	32451	45132	25314
34125	12534	34215	54123	23541
31452	21543	43251	51432	32514
13425	25134	42315	15423	23154
14352	52143	24351	51243	21345
41325	25413	42531	52134	12354
14235	24531	45213	25143	<i>extre.</i>
13453	42513	54231	21534	12345
21435	45231	52413	12543	
24153	54213	52134	15234	

each of them to be made in the same place
K 2 and

and by the same bells at the last *extream*, as they were at the first. Here the *singles* are made behind, and the *extreams* in the 2^d and 3^d places; and as the 4th and 5th bells do dodg behind at the first *extream*, so likewise when they come to dodg there again, the second *extream* is then made, the treble leading at both of them, as appeareth in the peal here prickt.

The first *Parting* change is here made the third change at the beginning, and that *fix* cuts compass.

In all the several ways of ringing this peal if the *Parting* changes are made at the fore-stroke, as in courie they are in this here prickt, then cutting compass is always on the same *fixes*, as in this peal: but when the *Parting* changes are made at back-stroke, then the contrary *fix* always cuts compass to what doth here.

Peal

Peals upon Six Bells.

The single Method.

THE changes are all *single*, and treble is the *hunt*. When the treble moves up out of the 2^d place, the two first bells continue slow dodging untill the treble comes there again. And when the treble moves down out of the fourth place, the two hind-bells likewise continue slow dodging untill the treble comes there again. When the treble leads, (if 'tis rung at half-pulls) the *fore-stroke change* (that is, at the third stroke of the treble's leading) is made in the 3^d and 4th places, the rest of the changes there are made he-

hind.

hind. By this method it will go *sixscore* changes.

To ring 240. When the *whole-hunt* leads, and the *half-hunt* dodgeth behind; the *fore-stroke change* must then be made in the 2^d and 3^d places, as in this here prickt, where the 2^d is the *half-hunt*, and there are little marks set at the *fore-stroke changes*.

To ring 360. When the *whole-hunt* leads, and the *half* and *quarter-hunts* dodg behind, the *fore-stroke* change must then be made in the 2^d and 3^d places as hefore.

To ring 720. When the *whole-hunt* leads, and the *half-hunt* dodgeth behind, the *fore-stroke* change must then be made in the 2^d and 3^d places as hefore, except the *quarter-hunt* dodgeth there with the *half-hunt*, and then in the 3^d and 4th places as at other times. The 2^d and 4th, or the 2^d and 6th may be the *half* and *quarter-hunts*, or others at pleasure.

“*Note*, in all the following peals upon six
“bells, the *bobs* are double changes, and al-
“ways made at the leadings of the whole
“hunt (except *Nonsuch Bob*, for there the
“Bobs are made at the change wherein the
“whole-hunt goeth to lead, and not when
“it doth lead.) And whereas in the fol-
“lowing

"lowing peals the directions for calling *bob*
 "runs thus; viz. Every time the half-hunt
 "dodgeth behind, a *Bob* must then be made, &c.
 "'tis there implied, That whereas every
 "time the whole-hunt leads, the two hind-
 "bells then dodg; therefore when the half-
 "hunt dodgeth there at the leading of the
 "whole-hunt, a *bob* must then be made. And
 "in like manner also must all the *bobs* in the
 "following peals be made at the leading of
 "the whole-hunt. He that rings the half-
 "hunt may best call *bob* in all peals.

A Cure for Melancholly.

D*oubles and Singles.* The Treble is the
whole-hunt, which leads four times,
 lieth behind as many, and twice in every
 other place. When it moves up out of the
 fourth place, the two bells in the third and
 fourth places continue dodging until it comes
 down there again, and then the two hind-
 bells dodg until the Treble displaceth them.
 The Treble is one of the bells which maketh
 every *double* change, except when it lieth
 still behind, and then the *double* is on the
 four first, and also when it leads the *double* is

on the four last. Every *single* is made in the fifth and sixth places, except when the Treble lieth there, and then in the third and fourth places. Every bell except the Treble lieth four times in the second place. By this method it will go *six-score* changes, but by making of *bobs* it will go 240, 360, or 720. The *bob* is a *double* change at the leading of the Treble, wherein the bell in the fourth place lieth still.

To ring 240. Every time the *half-hunt* dodgeth behind, a *bob* must then be made as in this here prickt, where 2 is the *half-hunt*.

To ring 360. Every time the *half* and *quarter-hunts* dodg together behind, a *bob* must then be made.

To ring 720. Every time the *half-hunt* dodgeth behind a *bob* must then be made, except the *quarter-hunt* dodgeth there with it, and then not.

123456	134625
213465	—
213456	162345
231465	162354
231456	163245
234165	163254
234156	—
243516	125634
245316	125643
243561	126534
245361	126543
423561	—
425361	154263
423516	154236
425316	152463
452136	152436
452163	—
451236	143526
451263	143562
415236	<i>bob</i>
415263	134526
145236	134562
145263	—
142536	156423
142563	156432
—	<i>bob</i>
156423	165423
156432	165432
—	<i>bob</i>
165423	132654
165432	132645
—	136254
143652	136245
143625	—
<i>bob</i>	124365
134652	124356

2 may be the *half* hunt, and 4 the *quarter* hunt, or others at pleasure.

The Morning Exercise.

Doubles and singles. 123456 ——— 142365
 Treble is the whole 213465 164352 142356
hunt, and hunteth up 213456 164325 ———
 into the 2^d, 3^d, and 4th 231465 *bob* 146532
 places, lying twice in 231456 163452 146523
 each; then having made 234165 163425 *bob*
 a dodg behind, it lyeth 234156 ——— 145632
 still in the sixth place, 243516 165243 145623
 and then makes ano- 243561 165234 ———
 ther dodg behind, and 245316 156243 143265
 so hunts down in the 245361 156234 143256
 same manner as it hun- 254631 ——— 134265
 ted up, and then leads 254613 154326 134256
 four times. When the 256431 154362 ———
 Treble moves down out 256413 *bob* 136524
 of the fifth place, the 265143 153426 136542
 two hind-bells dodg un- 265134 153462 *bob*
 till it comes up there 261543 ——— 135624
 again; during which 261534 152643 135642
 time the bell in the 4th 216543 152634 ———
 place lieth still. And 216534 125643 132465
 when the Treble moves 126543 125634 132456
 126534 ——— 123465
 162543 124365 123456
 162534 124356

up out of the second place, each bell that comes there lieth four times, until the Treble comes down there again. Every *single* is made behind. By this method it will go 120 changes; and by making of *bobs* it will go 240, 360, or 270. At the *bobs* the bell in the 2^d place always lieth still.

To ring 240. Every time the *half-hunt* dodgeth behind, a *bob* must then be made, as in this here prickt, where 2 is the *half-hunt*.

The warning for the *bobs* in the 360 and 720, is the same with that in the peal next before: 2 may be the *half-hunt*, and 4 the *quarter-hunt*, or others at pleasure.

The City Delight.

D*oubles and Singles.* Treble is the *whole-hunt*, and lieth four times before, four times behind, and twice in every other place. When it moves up out of the third place, the *singles* are made in the second and third places until it comes there again, and then behind until it moves up again out of the third place. When it moves down out of the fourth place, the two hind-bells dodg until it comes up there again, during which time the bell

bell in the fourth place lieth still. By this method it will go 120, and by making of *bobs* it will go 240, 360, or 720. At the *bobs* the bell in the second place always lieth still; and the warning for them is the same with that in the two last peals. In the 240 here prickt, 2 is the *half-hunt*; and in the 360 or 720, the 2 and 4 may be the *half* and *quarter-hunts*, or others at pleasure.

123456	265143	153462	126534	143256
213465	256143	—	126543	134265
213456	251634	156234	—	134256
231465	251643	156243	124365	—
231456	215634	165234	124356	135642
234165	215643	165243	142365	135624
243165	125634	—	142356	<i>bob</i>
234615	125643	164352	—	136542
243615	152634	164325	145623	136524
246351	152643	<i>bob</i>	145632	—
264351	—	163452	<i>bob</i>	132465
246531	154326	163425	146523	132456
264531	154362	—	146532	123465
265413	<i>bob</i>	162534	—	123456
256413	153426	162543	143265	—

London Nightingale.

Doubles and Singles. Treble is the whole-hunt, and lieth four times before, four times

times behind and twice in every other place. When it moves down out of the 5th place, the two hind-bells continue dodging until it comes there again, during which time the bell in the fourth place lieth still. And when the two hind-bells leave dodging then the two first bells dodg until the hind-bells dodg again, and then they cease. By this method it will go 120; and by making of *bobs* it will 240, 360, or 720. At the *bobs* the bell in the second place always lieth still; and the warning for them is the same with that in the preceding peals. In the 240 here prickt, 2 is the *half-hunt*; and in the 360 or 720, the 2 and 4 may be the *half* and *quarter-hunts* or others at pleasure.

123456	—	163245
213465	126543	163254
213456	126534	—
231465	162543	125634
231456	162534	125643
234165	—	152634
234156	153624	152643
243516	153642	—
423516	<i>bob</i>	164523
243561	156324	164532
423561	156342	<i>bob</i>
245361	—	165423
425361	134562	165432
245316	134526	—
425316	<i>bob</i>	143652
452136	135462	143625
452163	135426	<i>bob</i>
451236	—	146352
451263	142356	146325
415236	142365	—
415263	124356	132465
145236	124365	132456
145263	—	123465
154236	136245	123456
154263	136254	—

The Evening Delight.

Doubles and Singles. Treble is the whole-hunt and leads four times, lies behind four times, and twice in every other place, except in the 2d and 3d places where it makes a dodg every time it hunts up and down. Every other bell hath the same course with the whole-hunt; but observing, when they come down and have made a dodg in the second and third places, they lie still one change in the second place, and then make another dodg there, and so hunt up as the Treble did. But note, when the Treble goeth to lead and leaves leading, the bells in the third and fourth places lie still. Every single is made in the second and third places, and every bell lieth four times behind. By this me-

123456	—	—
213465	146253	
231465	164253	
213645	bob	
231645	146235	
236154	164235	
263154	—	—
236514	162453	
263514	126453	
265341	bob	
256341	162435	
265431	126435	
256431	—	—
254613	124653	
245613	142653	
254163	124563	
245163	142563	
241536	—	—
214536	145236	
241356	154236	
214356	145326	
124365	154326	
142365	—	—
124635	153462	
142635	135462	

thod

thod it will go 120. and by making of *bobs* it will go 240, 360, or 720. At the *bob*-change, the bell in the 4th place always lieth still.

To ring 240. Every time the *half-hunt* dodgeth in the second and third places a *bob* must then be made, as in this here prickt, where 6 is the *half-hunt*.

153642	165342
135642	156342
136524	153624
163524	135624
<i>bob</i>	153264
136542	135264
163542	—
—	132546
165324	123546
156324	132456
<i>bob</i>	123456

To ring 360. Every time the *half* and *quarter-hunts* dodg together in the second and third places, a *bob* must then be made.

To ring 720. Every time the *half-hunt* dodgeth in the 2^d and 3^d places a *bob* must then be made, except when the *quarter-hunt* dodgeth there with it, and then not.

In the 360 or 720, the 6 and 5 may be the *half* and *quarter-hunts*, or else 2 and 4, or others at pleasure.

Colledge Doubles.

TReble is the *whole-hunt*, and hath a direct hunting course. When it moves down out of the 5th place, the two hind-bells dodg until it comes there again; during which time

time the bell in the fourth place lieth still: but otherwise the five hind-bells have a direct hunting course. By this method it will go *sixty* changes; and by making of *bobs* it will go 120, 180, 360. At the *bob*-changes the bell in the second place always lieth still.

To ring 120. Every time the *half-hunt* dodgeth behind, a *bob* must then be made; as in this here prickt, where 2 is the *half-hunt*.

To ring 180. Every time the *half* and *quarter-hunt* dodg together behind, a *bob* must then be made.

To ring 360. Every time the *half-hunt* dodgeth behind a *bob* must then be made, except when the *quarter-hunt* dodgeth there with it, and then not.

In the 180 or 360, 2 and 4 may be the *half-*

1 2 3 4 5 6	1 5 6 2 3 4
2 1 3 4 6 5	1 6 5 2 4 3
2 3 1 4 5 6	— — — —
2 2 4 1 6 5	1 6 4 3 5 2
2 4 3 6 1 5	<i>bob</i>
2 4 6 3 5 1	1 6 3 4 2 5
2 6 4 5 3 1	— — — —
2 6 5 4 1 3	1 6 2 5 3 4
2 5 6 1 4 3	1 2 6 5 4 3
2 5 1 6 3 4	— — — —
2 1 5 6 4 3	1 2 4 3 6 5
1 2 5 6 3 4	1 4 2 3 5 6
1 5 2 6 4 3	— — — —
5 1 2 6 3 4	1 4 5 6 2 3
5 2 1 6 4 3	<i>bob</i>
5 2 6 1 3 4	1 4 6 5 3 2
5 6 2 3 1 4	— — — —
5 6 3 2 4 1	1 4 3 2 6 5
5 3 5 4 2 1	1 3 4 2 5 6
5 3 4 6 1 2	— — — —
5 4 3 1 6 2	1 3 5 6 4 2
5 4 1 3 2 6	<i>bob</i>
5 1 4 3 6 2	1 3 6 5 2 4
1 5 4 3 2 6	— — — —
<i>bob</i>	1 3 2 4 6 5
1 5 3 4 6 2	1 2 3 4 5 6
— — — —	— — — —

half and quarter-hunts, or others at pleasure.

By making of two *extreams*. the 360 may be doubled. They are to be made according to the rules in the *Introduction*, pag. 90.

Non-such Bob.

D*oubles.* Treble is the *whole-hunt*, and hath a direct hunting course. When it moves up out of the third place, the bell that comes there lieth still until the Treble comes down there again; during which time the two first bells dodg. When the Treble leaves the two hind-bells, they dodg until the change wherein the Treble goeth to lead, and then one of them moves down; but as soon as that change is made, the two hind-bells dodg again until the Treble moves up and parts them. Every time the Treble leads, the *double* is made on the four

1 2 3 4 5 6	5 3 2 6 4 1
2 1 3 4 6 5	3 5 2 6 1 4
2 3 1 4 5 6	5 3 2 1 6 4
2 3 4 1 6 5	5 3 1 2 4 6
3 2 4 6 1 5	5 1 3 2 6 4
2 3 4 6 5 1	1 5 3 6 2 4
3 2 4 5 6 1	1 5 6 3 4 2
2 3 4 5 1 6	5 1 6 3 2 4
3 2 4 1 5 6	5 6 1 3 4 2
3 2 1 4 6 5	5 6 3 1 2 4
3 1 2 4 5 6	6 5 3 2 1 4
1 3 2 5 4 6	5 6 3 2 4 1
1 3 5 2 6 4	6 5 3 4 2 1
3 1 5 2 4 6	5 6 3 4 1 2
3 5 1 2 6 4	6 5 3 1 4 2
3 5 2 1 4 6	6 5 1 3 2 4
5 3 2 4 1 6	6 1 5 2 4 3
3 5 2 4 6 1	bob

hind-

hind-bells throughout the peal. By this method it will go sixty changes; and by making of bobs it will go 120, 180, or 360. The *bob* is always made at the change wherein the Treble goeth to lead, the two first and two last bells making it.

To ring 120. Every time the *half-hunt* dodgeth before, is a warning for a *bob* to be made the next time the *whole-hunt* goeth to lead; as in this here prickt, where 6 is the *half-hunt*.

To ring 180. Every time the *half* and *quarter-hunts* dodg together before, is a warning for a *bob* to be made when next the Treble goeth to lead.

To ring 360. Every time the *half-hunt* dodgeth before, is a warning for a *bob* to be made the

165324	543162
163542	453512
613524	43621
631542	453261
635124	543216
365214	453126
635241	451362
365421	415326
635412	145336
365142	142563
361524	412536
316542	421563
<i>bob</i>	425136
136524	245316
135641	423361
315624	245631
351642	425613
356124	245163
536214	241536
356241	214563
536421	124653
356412	126435
536142	216453
531624	261435
513642	264153
153462	624513
154326	264531
514362	624351
541326	264315

next time the Treble goeth to lead, except the *quarter-hunt* dodgeth there with it, and then not.

In the 180 and 360, the 6 may be the *half-hunt* and 5 the *quarter-hunt*, or others at pleasure.

By making of two *extreams* the 360 may be doubled; they must be made according to the rule in the *Introduction*, pag. 90.

The *bobs* in this peal may also be made at the leadings of the *whole-hunt* as in other peals, and the bell in the fourth place to lie still at every *bob-change*. The warning for them in the 120, 180, and 360 being the same with that in the *Colledge Doubles*, pag. 143.

London Doubles.

THE Treble is the *whole-hunt*; and hath a direct hunting course. When it moves down out of the fifth place the two hind bells dodg until it comes there again, during which time the bell in the fourth place lieth still. When the Treble is behind, the two first bells make a change; but at other times the

the leading bell lieth still. By this method it will go *sixty* changes, and by making of *bobs* it will go 120, 180, or 360. At the *bob-changes* the bell in the second place always lieth still. The warning for the *bobs* in the 120, 180, and 360, is the same with that in *Colledge Doubles*, p. 143. By making of two *extreams* it will go 720. The *extreams* must be made according to the rule in the *Introduction*, pag. 90.

In the 120 here prickt, 2 is the *half-hunt*; and in the 180 and 360, 2 and 4 may be the *half* and *quarter-hunts*, or others at pleasure.

123456	541263	156342	— — — —
213465	542136	— — — —	164523
231456	524316	134562	<i>bob</i>
234165	523461	<i>bob</i>	165432
243615	253641	135416	— — — —
246351	256314	— — — —	143652
416531	265134	242356	<i>bob</i>
425613	261543	124365	146325
452163	216534	— — — —	— — — —
451236	126543	136245	132465
415263	162534	163254	123456
145236	— — — —	— — — —	— — — —
154263	153624	125634	— — — —
114236	<i>bob</i>	152643	— — — —

By this method the leading bell hath still.

and by making of changes, and by making of

At the 180, or 360, or 540, or 720, or 900, or 1080, or 1260, or 1440, or 1620, or 1800, or 1980, or 2160, or 2340, or 2520, or 2700, or 2880, or 3060, or 3240, or 3420, or 3600, or 3780, or 3960, or 4140, or 4320, or 4500, or 4680, or 4860, or 5040, or 5220, or 5400, or 5580, or 5760, or 5940, or 6120, or 6300, or 6480, or 6660, or 6840, or 7020, or 7200, or 7380, or 7560, or 7740, or 7920, or 8100, or 8280, or 8460, or 8640, or 8820, or 9000, or 9180, or 9360, or 9540, or 9720, or 9900, or 10080, or 10260, or 10440, or 10620, or 10800, or 10980, or 11160, or 11340, or 11520, or 11700, or 11880, or 12060, or 12240, or 12420, or 12600, or 12780, or 12960, or 13140, or 13320, or 13500, or 13680, or 13860, or 14040, or 14220, or 14400, or 14580, or 14760, or 14940, or 15120, or 15300, or 15480, or 15660, or 15840, or 16020, or 16200, or 16380, or 16560, or 16740, or 16920, or 17100, or 17280, or 17460, or 17640, or 17820, or 18000, or 18180, or 18360, or 18540, or 18720, or 18900, or 19080, or 19260, or 19440, or 19620, or 19800, or 19980, or 20160, or 20340, or 20520, or 20700, or 20880, or 21060, or 21240, or 21420, or 21600, or 21780, or 21960, or 22140, or 22320, or 22500, or 22680, or 22860, or 23040, or 23220, or 23400, or 23580, or 23760, or 23940, or 24120, or 24300, or 24480, or 24660, or 24840, or 25020, or 25200, or 25380, or 25560, or 25740, or 25920, or 26100, or 26280, or 26460, or 26640, or 26820, or 27000, or 27180, or 27360, or 27540, or 27720, or 27900, or 28080, or 28260, or 28440, or 28620, or 28800, or 28980, or 29160, or 29340, or 29520, or 29700, or 29880, or 30060, or 30240, or 30420, or 30600, or 30780, or 30960, or 31140, or 31320, or 31500, or 31680, or 31860, or 32040, or 32220, or 32400, or 32580, or 32760, or 32940, or 33120, or 33300, or 33480, or 33660, or 33840, or 34020, or 34200, or 34380, or 34560, or 34740, or 34920, or 35100, or 35280, or 35460, or 35640, or 35820, or 36000, or 36180, or 36360, or 36540, or 36720, or 36900, or 37080, or 37260, or 37440, or 37620, or 37800, or 37980, or 38160, or 38340, or 38520, or 38700, or 38880, or 39060, or 39240, or 39420, or 39600, or 39780, or 39960, or 40140, or 40320, or 40500, or 40680, or 40860, or 41040, or 41220, or 41400, or 41580, or 41760, or 41940, or 42120, or 42300, or 42480, or 42660, or 42840, or 43020, or 43200, or 43380, or 43560, or 43740, or 43920, or 44100, or 44280, or 44460, or 44640, or 44820, or 45000, or 45180, or 45360, or 45540, or 45720, or 45900, or 46080, or 46260, or 46440, or 46620, or 46800, or 46980, or 47160, or 47340, or 47520, or 47700, or 47880, or 48060, or 48240, or 48420, or 48600, or 48780, or 48960, or 49140, or 49320, or 49500, or 49680, or 49860, or 50040, or 50220, or 50400, or 50580, or 50760, or 50940, or 51120, or 51300, or 51480, or 51660, or 51840, or 52020, or 52200, or 52380, or 52560, or 52740, or 52920, or 53100, or 53280, or 53460, or 53640, or 53820, or 54000, or 54180, or 54360, or 54540, or 54720, or 54900, or 55080, or 55260, or 55440, or 55620, or 55800, or 55980, or 56160, or 56340, or 56520, or 56700, or 56880, or 57060, or 57240, or 57420, or 57600, or 57780, or 57960, or 58140, or 58320, or 58500, or 58680, or 58860, or 59040, or 59220, or 59400, or 59580, or 59760, or 59940, or 60120, or 60300, or 60480, or 60660, or 60840, or 61020, or 61200, or 61380, or 61560, or 61740, or 61920, or 62100, or 62280, or 62460, or 62640, or 62820, or 63000, or 63180, or 63360, or 63540, or 63720, or 63900, or 64080, or 64260, or 64440, or 64620, or 64800, or 64980, or 65160, or 65340, or 65520, or 65700, or 65880, or 66060, or 66240, or 66420, or 66600, or 66780, or 66960, or 67140, or 67320, or 67500, or 67680, or 67860, or 68040, or 68220, or 68400, or 68580, or 68760, or 68940, or 69120, or 69300, or 69480, or 69660, or 69840, or 70020, or 70200, or 70380, or 70560, or 70740, or 70920, or 71100, or 71280, or 71460, or 71640, or 71820, or 72000, or 72180, or 72360, or 72540, or 72720, or 72900, or 73080, or 73260, or 73440, or 73620, or 73800, or 73980, or 74160, or 74340, or 74520, or 74700, or 74880, or 75060, or 75240, or 75420, or 75600, or 75780, or 75960, or 76140, or 76320, or 76500, or 76680, or 76860, or 77040, or 77220, or 77400, or 77580, or 77760, or 77940, or 78120, or 78300, or 78480, or 78660, or 78840, or 79020, or 79200, or 79380, or 79560, or 79740, or 79920, or 80100, or 80280, or 80460, or 80640, or 80820, or 81000, or 81180, or 81360, or 81540, or 81720, or 81900, or 82080, or 82260, or 82440, or 82620, or 82800, or 82980, or 83160, or 83340, or 83520, or 83700, or 83880, or 84060, or 84240, or 84420, or 84600, or 84780, or 84960, or 85140, or 85320, or 85500, or 85680, or 85860, or 86040, or 86220, or 86400, or 86580, or 86760, or 86940, or 87120, or 87300, or 87480, or 87660, or 87840, or 88020, or 88200, or 88380, or 88560, or 88740, or 88920, or 89100, or 89280, or 89460, or 89640, or 89820, or 90000, or 90180, or 90360, or 90540, or 90720, or 90900, or 91080, or 91260, or 91440, or 91620, or 91800, or 91980, or 92160, or 92340, or 92520, or 92700, or 92880, or 93060, or 93240, or 93420, or 93600, or 93780, or 93960, or 94140, or 94320, or 94500, or 94680, or 94860, or 95040, or 95220, or 95400, or 95580, or 95760, or 95940, or 96120, or 96300, or 96480, or 96660, or 96840, or 97020, or 97200, or 97380, or 97560, or 97740, or 97920, or 98100, or 98280, or 98460, or 98640, or 98820, or 99000, or 99180, or 99360, or 99540, or 99720, or 99900, or 100080, or 100260, or 100440, or 100620, or 100800, or 100980, or 101160, or 101340, or 101520, or 101700, or 101880, or 102060, or 102240, or 102420, or 102600, or 102780, or 102960, or 103140, or 103320, or 103500, or 103680, or 103860, or 104040, or 104220, or 104400, or 104580, or 104760, or 104940, or 105120, or 105300, or 105480, or 105660, or 105840, or 106020, or 106200, or 106380, or 106560, or 106740, or 106920, or 107100, or 107280, or 107460, or 107640, or 107820, or 108000, or 108180, or 108360, or 108540, or 108720, or 108900, or 109080, or 109260, or 109440, or 109620, or 109800, or 109980, or 110160, or 110340, or 110520, or 110700, or 110880, or 111060, or 111240, or 111420, or 111600, or 111780, or 111960, or 112140, or 112320, or 112500, or 112680, or 112860, or 113040, or 113220, or 113400, or 113580, or 113760, or 113940, or 114120, or 114300, or 114480, or 114660, or 114840, or 115020, or 115200, or 115380, or 115560, or 115740, or 115920, or 116100, or 116280, or 116460, or 116640, or 116820, or 117000, or 117180, or 117360, or 117540, or 117720, or 117900, or 118080, or 118260, or 118440, or 118620, or 118800, or 118980, or 119160, or 119340, or 119520, or 119700, or 119880, or 120060, or 120240, or 120420, or 120600, or 120780, or 120960, or 121140, or 121320, or 121500, or 121680, or 121860, or 122040, or 122220, or 122400, or 122580, or 122760, or 122940, or 123120, or 123300, or 123480, or 123660, or 123840, or 124020, or 124200, or 124380, or 124560, or 124740, or 124920, or 125100, or 125280, or 125460, or 125640, or 125820, or 126000, or 126180, or 126360, or 126540, or 126720, or 126900, or 127080, or 127260, or 127440, or 127620, or 127800, or 127980, or 128160, or 128340, or 128520, or 128700, or 128880, or 129060, or 129240, or 129420, or 129600, or 129780, or 129960, or 130140, or 130320, or 130500, or 130680, or 130860, or 131040, or 131220, or 131400, or 131580, or 131760, or 131940, or 132120, or 132300, or 132480, or 132660, or 132840, or 133020, or 133200, or 133380, or 133560, or 133740, or 133920, or 134100, or 134280, or 134460, or 134640, or 134820, or 135000, or 135180, or 135360, or 135540, or 135720, or 135900, or 136080, or 136260, or 136440, or 136620, or 136800, or 136980, or 137160, or 137340, or 137520, or 137700, or 137880, or 138060, or 138240, or 138420, or 138600, or 138780, or 138960, or 139140, or 139320, or 139500, or 139680, or 139860, or 140040, or 140220, or 140400, or 140580, or 140760, or 140940, or 141120, or 141300, or 141480, or 141660, or 141840, or 142020, or 142200, or 142380, or 142560, or 142740, or 142920, or 143100, or 143280, or 143460, or 143640, or 143820, or 144000, or 144180, or 144360, or 144540, or 144720, or 144900, or 145080, or 145260, or 145440, or 145620, or 145800, or 145980, or 146160, or 146340, or 146520, or 146700, or 146880, or 147060, or 147240, or 147420, or 147600, or 147780, or 147960, or 148140, or 148320, or 148500, or 148680, or 148860, or 149040, or 149220, or 149400, or 149580, or 149760, or 149940, or 150120, or 150300, or 150480, or 150660, or 150840, or 151020, or 151200, or 151380, or 151560, or 151740, or 151920, or 152100, or 152280, or 152460, or 152640, or 152820, or 153000, or 153180, or 153360, or 153540, or 153720, or 153900, or 154080, or 154260, or 154440, or 154620, or 154800, or 154980, or 155160, or 155340, or 155520, or 155700, or 155880, or 156060, or 156240, or 156420, or 156600, or 156780, or 156960, or 157140, or 157320, or 157500, or 157680, or 157860, or 158040, or 158220, or 158400, or 158580, or 158760, or 158940, or 159120, or 159300, or 159480, or 159660, or 159840, or 160020, or 160200, or 160380, or 160560, or 160740, or 160920, or 161100, or 161280, or 161460, or 161640, or 161820, or 162000, or 162180, or 162360, or 162540, or 162720, or 162900, or 163080, or 163260, or 163440, or 163620, or 163800, or 163980, or 164160, or 164340, or 164520, or 164700, or 164880, or 165060, or 165240, or 165420, or 165600, or 165780, or 165960, or 166140, or 166320, or 166500, or 166680, or 166860, or 167040, or 167220, or 167400, or 167580, or 167760, or 167940, or 168120, or 168300, or 168480, or 168660, or 168840, or 169020, or 169200, or 169380, or 169560, or 169740, or 169920, or 170100, or 170280, or 170460, or 170640, or 170820, or 171000, or 171180, or 171360, or 171540, or 171720, or 171900, or 172080, or 172260, or 172440, or 172620, or 172800, or 172980, or 173160, or 173340, or 173520, or 173700, or 173880, or 174060, or 174240, or 174420, or 174600, or 174780, or 174960, or 175140, or 175320, or 175500, or 175680, or 175860, or 176040, or 176220, or 176400, or 176580, or 176760, or 176940, or 177120, or 177300, or 177480, or 177660, or 177840, or 178020, or 178200, or 178380, or 178560, or 178740, or 178920, or 179100, or 179280, or 179460, or 179640, or 179820, or 180000, or 180180, or 180360, or 180540, or 180720, or 180900, or 181080, or 181260, or 181440, or 181620, or 181800, or 181980, or 182160, or 182340, or 182520, or 182700, or 182880, or 183060, or 183240, or 183420, or 183600, or 183780, or 183960, or 184140, or 184320, or 184500, or 184680, or 184860, or 185040, or 185220, or 185400, or 185580, or 185760, or 185940, or 186120, or 186300, or 186480, or 186660, or 186840, or 187020, or 187200, or 187380, or 187560, or 187740, or 187920, or 188100, or 188280, or 188460, or 188640, or 188820, or 189000, or 189180, or 189360, or 189540, or 189720, or 189900, or 190080, or 190260, or 190440, or 190620, or 190800, or 190980, or 191160, or 191340, or 191520, or 191700, or 191880, or 192060, or 192240, or 192420, or 192600, or 192780, or 192960, or 193140, or 193320, or 193500, or 193680, or 193860, or 194040, or 194220, or 194400, or 194580, or 194760, or 194940, or 195120, or 195300, or 195480, or 195660, or 195840, or 196020, or 196200, or 196380, or 196560, or 196740, or 196920, or 197100, or 197280, or 197460, or 197640, or 197820, or 198000, or 198180, or 198360, or 198540, or 198720, or 198900, or 199080, or 199260, or 199440, or 199620, or 199800, or 199980, or 200160, or 200340, or 200520, or 200700, or 200880, or 201060, or 201240, or 201420, or 201600, or 201780, or 201960, or 202140, or 202320, or 202500, or 202680, or 202860, or 203040, or 203220, or 203400, or 203580, or 203760, or 203940, or 204120, or 204300, or 204480, or 204660, or 204840, or 205020, or 205200, or 205380, or 205560, or 205740, or 205920, or 206100, or 206280, or 206460, or 206640, or 206820, or 207000, or 207180, or 207360, or 207540, or 207720, or 207900, or 208080, or 208260, or 208440, or 208620, or 208800, or 208980, or 209160, or 209340, or 209520, or 209700, or 209880, or 210060, or 210240, or 210420, or 210600, or 210780, or 210960, or 211140, or 211320, or 211500, or 211680, or 211860, or 212040, or 212220, or 212400, or 212580, or 212760, or 212940, or 213120, or 213300, or 213480, or 213660, or 213840, or 214020, or 214200, or 214380, or 214560, or 214740, or 214920, or 215100, or 215280, or 215460, or 215640, or 215820, or 216000, or 216180, or 216360, or 216540, or 216720, or 216900, or 217080, or 217260, or 217440, or 217620, or 217800, or 217980, or 218160, or 218340, or 218520, or 218700, or 218880, or 219060, or 219240, or 219420, or 219600, or 219780, or 219960, or 220140, or 220320, or 220500, or 220680, or 220860, or 221040, or 221220, or 221400, or 221580, or 221760, or 221940, or 222120, or 222300, or 222480, or 222660, or 222840, or 223020, or 223200, or 223380, or 223560, or 223740, or 223920, or 224100, or 224280, or 224460, or 224640, or 224820, or 225000, or 225180, or 225360, or 225540, or 225720, or 225900, or 226080, or 226260, or 226440, or 226620, or 226800, or 226980, or 227160, or 227340, or 227520, or 227700, or 227880, or 228060, or 228240, or 228420, or 228600, or 228780, or 228960, or 229140, or 229320, or 229500, or 229680, or 229860, or 230040, or 230220, or 230400, or 230580, or 230760, or 230940, or 231120, or 231300, or 231480, or 231660, or 231840, or 232020, or 232200, or 232380, or 232560, or 232740, or 232920, or 233100, or 233280, or 233460, or 233640, or 233820, or 234000, or 234180, or 234360, or 234540, or 234720, or 234900, or 235080, or 235260, or 235440, or 235620, or 235800, or 235980, or 236160, or 236340, or 236520, or 236700, or 236880, or 237060, or 237240, or 237420, or 237600, or 237780, or 237960, or 238140, or 238320, or 238500, or 238680, or 238860, or 239040, or 239220, or 239400, or 239580, or 239760, or 239940, or 240120, or 240300, or 240480, or 240660, or 240840, or 241020, or 241200, or 241380, or 241560, or 241740, or 241920, or 242100, or 242280, or 242460, or 242640, or 242820, or 243000, or 243180, or 243360, or 243540, or 243720, or 243900, or 244080, or 244260, or 244440, or 244620, or 244800, or 244980, or 245160, or 245340, or 245520, or 245700, or 245880, or 246060, or 246240, or 246420, or 246600, or 246780, or 246960, or 247140, or 247320, or 247500, or 247680, or 247860, or 248040, or 248220, or 248400, or 248580, or 248760, or 248940, or 249120, or 249300, or 249480, or 249660, or 249840, or 250020, or 250200, or 250380, or 250560, or 250740, or 250920, or 251100, or 251280, or 251460, or 251640, or 251820, or 252000, or 252180, or 252360, or 252540, or 252720, or 252900, or 253080, or 253260, or 253440, or 253620, or 253800, or 253980, or 254160, or 254340, or 254520, or 254700, or 254880, or 255060, or 255240, or 255420, or 255600, or 255780, or 255960, or 256140, or 256

Doubles, and
Triples.

Single Bob.

123456	152364
214365	135346
241366	
243165	165432
234015	bob
220491	164523
362541	
638214	134256
663124	143265
651342	
615824	158624
163542	135652
136524	
385642	125463
351624	bob
356142	124536
365412	
684321	164352
648051	148236
688235	
426135	156283
421653	bob
432635	152648
146253	
708621	132365
422635	122456
etc	

123456	134563
214365	135496
241635	132416
426153	135632
462513	130632
645231	152683
462531	130612
645213	142956
654123	143265
561432	130422
516342	185538
153824	185324
156342	125163
513624	125163
531264	152436
352446	122431
325416	132654
234561	130645
325461	130645
234516	130645
243156	130645
421365	164523
412635	132654
146253	132654
bob	123456
164235	

These six peals will each of them go *sixty* changes without any *bob*, and by making of *bobs* each of them will go 120, 180, and 360. In three of them, *viz.* *Triples Doubles* and *Singles*, *Single-bob*, and *City-bob*, at the *bob-changes* the bell in the fourth place always lieth still; whereas at the rest of the changes which are made at the leadings of the *whole-hunt*, the bell in the second place lieth still. And in the other three peals, *viz.* *Triples doubles and singles dodging behind*, *Doubles and Triples*, and *London Bob*, at the *bob-changes* the bell in the second place always lieth still, whereas at the rest of the changes that are made at the leadings of the *whole-hunt*, the bell in the fourth place lieth still. The warning for the *bobs* in the 120, 180, and 360, in each of these *six* peals is the same with that in the 120, 180, and 360 in *College Doubles*, p. 143. Each of these peals will go 720 with two *extremes*, which must be made according to the rule in the *Introduction*, page 90.

In the 120 of each there prick, *viz.* in *City Bob*, *London Bob*, and *Triples doubles and singles*, the 2 is the *half-hunt*, and in the other three peals the 3 is the *half-hunt*.

In the 180 and 360 of each peal, the 2 and 4 may be the *half* and *quarter-hunts*, or others at pleasure.

New Bob.

Triples and Doubles. The general method of this Peal is the same with *Grandfire Bob*, and the *bobs* also made as in that peal. It will go 120, 180, or 240; and by making of two *extreams* it will go 360 or 480; and with six *singles* it will go 720.

To ring 120. Every time the *half-hunt* dodgeth behind a *bob* must then be made.

To ring 180. Every time the *half* and *quarter-hunt* dodg together behind, a *bob* must then be made; and by making of two *extreams* it will go 360. The first *extream* may be made at the first, second, or third *bob*; observing to make the second *extream* at the third following *bob* from the first *extream*, where the *singles* in both must be made behind.

To ring 240. The *bobs* throughout the peal are made by the same rule as in the 120; but farther observing, when the *whole* and *half-hunt* come together before, if the *quarter-hunt* lieth either in the third or fourth places, then a *single* must be made betwixt the two next *extream* bells to the *quarter-hunt*.

The 2 may be the *half-hunt* and 4 the *quarter-hunt*, or others at pleasure.

Colledge Little Bob, dodging behind.

Triples and Doubles. The

Treble is the whole-hunt, and hath a direct hunting course. When it moves down out of the fifth place, the two hind-bells dodg until it comes there again. All the bells have a direct hunting course, but observing, that when any bell moves up into the fourth place, if the Treble is then any where below it, it lies there twice, and then moves down again. By this method it will go sixty changes; and by making of *bobs* it will go 120, 180, or 360. At every *bob-change* the bell in the second place lieth still. The warning for the *bobs* is the same with that in *Colledge Doubles*, pag. 143.

And the two *extreams* in the

720 must be made according to the rule in the *Introduction*, page 90.

456	162245
4365	126354
241356	—
423165	156423
432615	<i>bob</i>
346251	154632
364521	—
635412	134256
653142	143265
561324	—
516342	163542
153624	136524
135642	—
346524	126435
361542	<i>bob</i>
635124	124653
653214	—
562341	154326
526431	145362
254613	—
245163	165243
421536	<i>bob</i>
412563	162534
145236	—
<i>bob</i>	132465
142563	123456

In

In the 120 here prickt, 3 is the *half-hunt*, and in the 180 or 360, 2 and 4 may be the *half* and *quarter-hunts*, or others at pleasure.

This peal in practice will be found very plain and easie, and also good Musick.

Colledge Little Bob, dodging before and behind.

T*riples and Doubles.* The Treble hath a direct hunting course, and when it moves up out of the second place, the two first bells dodg until it comes there again; and also when it moves down out of the 5th place, the two hind-bells dodg until it comes there again. Every bell that moves up into the fourth place, if the Treble is any where below it, lies there twice and then hunts down; and also every bell that moves down into the third place, if the Treble is any where above it, lieth there twice, and then hunts up behind. By this method it will go *sixty* chan-

123456	bob
214365	156343
241356	—
423165	134563
243615	bob
426351	135426
246531	—
425613	142356
245163	124365
421536	—
412563	136245
145236	163254
154263	—
512436	125634
521463	152643
254136	—
524316	164523
253461	bob
523641	165432
256314	—
526134	143652
251643	bob
215634	146335
126543	—
162534	132465
—	123456
153624	—

changes, and by making of *bobs* it will go 120, 180, or 360. At every *bob-change* the bell in the second place lieth still. The 2 is the *half-hunt* in the 120 here prickt, and 2 and 4 may be the *half* and *quarter-hunts* in the 120 and 360, or others at pleasure.

The warning for the *bobs* is the same with that in the *Colledge Doubles*, p. 143. And the two *extreams* in the 720 must be made according to the general rule in the *Introduction*, page 90.

Cours Bob.

Triples and Doubles. The Treble hath a direct hunting course. Every bell that comes before and behind makes a *Dodge*, then lieth still, and so moves away, except the bell that lieth still behind when the treble leads, and also that bell which leads when the Treble lieth behind, both which do *dodge* before and after their lying still, and then move away. When the treble leads and lieth behind, the *double* is made on the four middle bells. By this method it will go *sixty* changes; and with *bobs* it will go 120, 180, or 360. At the *bob-changes* the bell in the fourth place lieth still.

To ring 120. Every time the *half-hunt* maketh a change next the *whole-hunt*, a *bob* must then be made, as in this here prickt, where 2 is the *half-hunt*.

1	2	3	4	5	6	1	6	5	3	2	4
2	1	4	3	6	5	1	5	6	2	3	4
2	4	1	3	5	6	1	5	6	2	3	4
4	2	3	1	6	5	1	4	3	2	6	5
2	4	3	6	1	5	1	5	4	6	2	3
4	2	6	3	5	1	1	5	6	2	3	4
4	6	2	5	3	1	1	5	2	6	4	3

To ring 180. Every time the *half* and *quarter-hunts* make a change together next the *whole-hunt*, a *bob* must then be made.

6	4	5	2	1	3	1	6	5	3	2	4
4	6	5	1	2	3	1	2	5	6	3	4
6	4	1	5	3	2	1	5	6	2	3	4
6	1	4	5	2	3	1	4	3	6	5	2
1	6	5	4	3	2	1	3	4	5	6	2
1	5	6	3	4	2	1	5	6	3	4	2

To ring 360. Every time the *half-hunt* maketh a change next the *whole-hunt* a *bob* must then be made, except when a *quarter-hunt* makes a change there with it, and then not.

5	1	3	6	3	4	1	2	6	5	4	3
5	3	1	6	4	2	1	6	5	3	4	2
5	3	6	1	2	4	1	6	3	5	3	4
5	3	6	1	4	2	1	6	3	5	3	4
3	5	2	6	4	1	1	4	3	5	2	6
3	2	5	4	6	1	1	3	4	2	5	6
2	3	4	5	1	6	1	2	3	4	5	6
3	2	4	1	5	6	1	6	5	2	4	3

In the 180 and 360 2 and 4 may be the *half* and *quarter-hunts*, or others at pleasure. The two *extreams* in the 720 must be made according to the rule in the *Introduction*. The first *extream* may be made either

2	3	1	4	6	5	1	5	6	4	2	3
2	1	3	4	5	6	1	2	3	4	5	6
1	2	4	3	6	5	1	3	2	4	9	5
1	4	2	3	5	6	1	2	3	4	5	6

ther the first, second, or third time that the half and quarter-hunts make a change together in the second and third places at the leading of the whole-hunt; and then the second *extream* must be made the third time following that those two bells make a change there again, the *extreams* being there made in the fourth and fifth places, and the *singles* in the second and third places.

Every time the Treble leads, the *double* may as well be made on the four hind-bells, and the *bobs* to be made as before; but the warning for them the same with *Colledge Doubles*.

Five Colledge Bobs.

IN these five peals the Treble is the whole-hunt, and hath a like dodging course in all of them. The general method of the five peals is as follows: *viz.*

Colledge Bob the first. When the Treble moves down out of the fifth place, the two hind-bells dodg until it comes there again. Every bell leads twice, and then hunts up into the fourth place, unless the dodging course of the Treble hinders it, where it lieth twice and then moves down again; except the bell that

that dodged with the Treble before, and also that which leads when the Treble lieth still behind, both which hunt directly up. When the Treble moves down from dodging in the third and fourth places, the bell that dodged there with it continues in those two places, lying twice together in each by turns until the Treble comes to dodg there with it again.

Colledge Bob the second. Every bell when it comes to lead makes a dodg before, then it lieth still one change, then it makes another dodg, and so moves up into the fourth place where it lieth still twice, and then down again; except it dodgeth with the Treble in the fourth place, and then it hunts up behind. But when the Treble moves down out of the third place, the two bells in the third and fourth places continue there until the Treble comes up there again, during which time the two hind-bells dodg.

Colledge Bob the third. When the Treble leaves leading, the two first bells dodg until it comes to lead again; except when the Treble dodgeth behind, for then the two first bells lie still. When the Treble leaves the two hind-bells, they lie still one change, dodg the next, and so by turns until the treble comes there again. The two middle bells always dodg until the Treble hindereth them.

Colledge Bob the
First.

123456	435216
214365	5c.
124356	163542
213465	bob.
231456	165324
324165	—
321456	123564
234165	bob.
243615	125346
426351	—
462315	143526
643251	134562
634521	—
365412	165432
356421	156423
534612	—
543162	124653
451326	142635
453162	—
541326	136245
514362	bob.
153426	132654
513462	—
154326	156234
145362	bob.
413526	152643
143562	—
415326	146253
451362	164235
543126	—
541362	132465
453126	123456

Colledge Bob the
Second.

123456	543216
214365	5c.
124356	153624
213465	bob
231645	135642
326154	—
231654	153462
326145	bob
36215	135426
634251	—
364215	153246
632451	152364
623541	—
265314	125634
625341	126543
263514	—
236154	162453
321645	164235
236145	—
321654	146325
312564	bob
135246	164352
315264	—
132546	146532
135264	bob
312546	164523
132564	—
315246	146253
351426	142635
534162	—
351462	124365
534126	123456

Colledge Bob the
Third.

123456	462513
214365	5c.
123465	165432
214356	bob
241365	156423
423156	—
241356	143526
423105	bob
243615	134562
426351	—
423615	152364
246351	153246
423651	—
246315	126543
243651	125634
426315	—
246135	164235
421653	162453
246153	—
421635	143652
412653	bob
146235	134625
412635	—
146253	165324
142635	bob
416253	156342
142653	—
416235	132546
461253	135264
642135	—
461235	124365
642153	123456

Colledge Bob the
Fourth.

123456	462513
214365	5c.
124356	165432
213465	bob
231456	156423
324165	—
321456	143526
234165	bob
213615	134562
426351	—
246315	152364
423651	153246
246351	—
423615	126543
243651	125634
426315	—
462135	164235
641253	162453
642135	—
461253	143652
416235	bob
142653	134625
412635	—
146253	165324
142635	bob
416253	156342
146235	—
412653	132546
421635	135264
246153	—
241635	124365
426153	123456

Colledge Bob the
Fifth.

123456	632514
214365	Sc.
124356	163542
213465	bob
231456	136524
324165	—
321456	163425
234165	bob
324615	136452
236451	—
234615	163254
326451	162345
234651	—
326415	126543
324651	125634
236415	—
326145	152436
231654	154263
236145	—
321654	145362
312645	bob
136254	154326
316245	—
132654	145623
136245	bob
312654	154632
132645	—
316254	145236
361245	142563
631254	—
631245	124365
362154	123456

Colledge Bob the fourth.

When the Treble leaves the two hind bells, they dodg until it comes there again; and then the two first bells dodg until the Treble gives way for the two hind bells to dodg again, and then the two first bells cease dodging.

Colledge Bob the fifth.

When the Treble leaves the two hind bells, they dodg until it comes there again. And when it leaves the two first bells they lie still one change, dodg the next, and so by turns until it comes down there again; during which time the bells in the third and fourth places dodg except when the Treble hindereth them.

By these methods each of them will go 120 changes, and by making of *bobs* they will go 240, 360, or 720. In the first of them the bell in the second place lieth still at the *bob*-changes, and in

M the

the other four the bell in the fourth place always lieth still.

To ring 240. Every time the *half-hunt* dodgeth behind a *bob* must then be made, as in these peals here prickt; where, in the first peal the 4 is the *half-hunt*, and in the other four peals the 2 is the *half-hunt*.

To ring 360. Every time the *half* and *quarter-hunts* dodg together behind, a *bob* must then be made.

To ring 720. Every time the *half-hunt* dodgeth behind a *bob* must then be made, except when the *quarter-hunt* dodgeth there with it, and then not.

In the 360 or 720 of each peal the 2 may be the *half-hunt*, and 4 the *quarter-hunt*, or others at pleasure.

The Experiment.

T*Riples and Doubles.* The Treble is the *whole-hunt*, but never hunteth up farther than the fourth place, for the four first bells go *Doubles and Singles*; and every time the Treble leads an *extream* is made in the third and fourth places, according to the common course of *doubles* and *singles* upon four bells; which course of *doubles* and *singles* must

must be continued, the two hind bells in the mean time dodging, until the making of the first *Parting* change, which will separate the two hind bells; and then the four first bells go the same course of *doubles* and *singles* again, the two hind bells dodging as before, until the making of the second *Parting* change, and so successively. The *Parting* change is a *double* change on the four middle bells, and made at the leading of the Treble. The first *Parting* change may be made either at the first second or third leading of the Treble, observing, that whatsoever bell in the first *Parting* change moves down to the Treble, when the Treble leads and that bell lieth next it again, the second *Parting* change must then be made. And whatsoever bell in the second *Parting* change moves down to the Treble when the Treble leads, and that bell lieth next it again, the third *Parting* change must then be made, and so successively. There being five *Parting* changes in the Peal, and as many *half-hunts*, each of the bells (the Treble excepted) taking that place one after another; and consequently, the five persons that ring them must call the *Parting* changes one after another as their turn comes, according to the aforesaid rule.

Chan-

Changes upon Seven Bells.

THE methods upon *five* may be prickt up on *seven*, observing but the true difference of proportion in the changes; that is *doubles* upon *five* bells must be *triples* upon *seven*; *doubles* and *singles* upon *five* must be *triples* and *doubles* upon *seven*, &c.

Plain Triples.

ALL the bells have a direct hunting course. All peals upon *six* bells wherein half the changes are *triples*, will go upon *seven* according to this method here prickt; two of the changes upon *six* being always made at the leadings of the Treble, the six hindmost bells making them: the first is a *triple* change brought in by the course of the bells, and the next must either be *double* or *single* according to the method of the changes upon *six*.

1234567
2143657
2416375
4261735
4627153
6472513
6745231
7654321
7563412
5736142
5371624
3517264
3152746
1325476

Dodge

Dodging Triples.

Triples and Doubles upon six may also go upon seven, according to this method here prickt, but in the same manner as the former.

1	2	3	4	5	6	7
2	1	4	3	5	7	6
2	4	1	5	3	6	7
4	2	5	1	3	7	6
4	5	2	3	1	6	7
5	4	3	2	6	1	7
4	5	2	3	6	7	1
5	4	3	2	7	6	1
4	5	2	3	7	1	6
5	4	3	2	1	7	6
5	3	4	1	2	6	7
3	5	1	4	2	7	6
3	1	5	2	4	6	7
1	3	2	5	4	7	6
1	3	5	2	7	4	6

Colledge. Bob Triples.

EVery time the Tre-
ble leaves leading,
the bell in the third
place lieth still, whilst
the four hind bells dodg;
but otherwise all the
bells have a direct hunt-

1	2	3	4	5	6	7
6	7	4	5	3	1	2
2	1	3	5	4	7	6
2	3	1	4	5	6	7
3	2	4	1	6	5	7
3	4	2	6	1	7	5
4	3	6	2	7	1	5
4	6	3	7	2	5	1
6	4	7	3	5	2	1

ing course as Plain Triples. By this method it will go seventy changes, and by making of bobs it will go 350. The rule for the bobs is this; when the Treble goeth to lead, if the half-hunt lying before gives it

M 3

place,

place, then a *bob* must be made at that change, wherein the bell in the third place lieth still, and the four hind bells *dodg*; so that at every *bob* the four hind bells make two *dodges* before they part. By making of two *extreams* it will go 700, and with four *extreams* it will go 1400. But by making of intervening *bobs* it will go 700 compleat *triples* without any *extream*; 1400 with two *extreams*, and 2800 with four *extreams*. Any bell may be made a *half-hunt*.

Colledge Bob, Triples: the second way.

1234567	4536271	7162534	7326145
2135476	5463721	1726354	3762415
2314567	5647312	1273645	3674251
3241576	6574132	2176354	
3425167	6751423	2713645	
4352617	7615243	7231654	

when the Treble leaves leading, the two hind bells *dodg* until Treble parts them; but in all other respects 'tis the same with the former, and the *bobs* made in the same manner, and by the same rule as in that peal, and it will go as many changes also as that.

Colledge Triples, dodging behind.

1234567	5346271	7165324	3675124
2143576	3564721	1756342	6357124
2415367	3657412	1753624	6532741
4251376	6375142	7135642	
4523167	6731524	7316524	
5432617	7613542	3761542	

Colledge Triples, dodging before and behind.

1234567	2436571	4126753	4726153
2143576	4263751	1462735	7462513
2415367	2467315	1467253	4765231
4251376	4276135	4176235	
2453167	2471653	4712653	
4235617	4217635	7421635	

Each of these two peals by the method here prickt will go *Eighty four* changes; and then when the Treble leads, and the *half-bunt* lieth next it, a *Parting* change being then made, they will go 420. And by making of *bobs* they will go 5040. 2 may be the *half-bunt*, or any other at pleasure. The *Parting* change

change is a *double* on the four middlemost of the six hind bells.

'Tis plainly demonstrable, that he *Principle* upon *five* may go 420 *triples* upon *seven*, which is a twelfth part; 840, which is a sixth part; or 1260, which is a fourth part of the whole, and the utmost period of *triple* changes. And then by making of four *extreams* it may go 5040, the compleat peal.

Great variety of peals may be prickt upon seven: as *Triples, Triples and Doubles, Triples Doubles and Singles; Doubles, Doubles and Singles, &c.* But changes upon *seven* being seldom practised, I will therefore forbear to waste more paper in pricking down examples, and proceed to the changes on *eight*.

Changes upon Eight Bells.

S*ix* scores upon *five* bells are commonly rung upon *eight*, three bells lying behind. The most musical to lie behind are 2 1 8, 4 1 8, 1 4 8, 2 4 8, 3 4 8, 4 6 8, 6 4 8, 5 4 8, 8 6 4, 2 4 1, 3 2 1. and 1 3 5 to be laid behind, and then 1 and 3 to dodg throughout the peal. And also 1 8 4 to be laid behind, and to go the six changes thus, 8 1 4. 8 4 1. 4 8 1.

4 8 1. 4 1 8. 1 4 8. 1 8 4. 8 1 4. &c. and so on to the end of the *sixscore*. They may go the *sixes* either at whole or half-pulls. Peals upon *six*, as *Triples* and *Doubles*, &c. make exceeding good musick upon *Eigh* 4 8. 6 8. 4 1. or 1 8. lying behind. Or else *Triples* and *doubles* upon the six middle bells, the *Treble* leading, and the *Tenor* lying behind. And also *Triples* upon *seven*, the *Tenor* lying behind. But for such as have not yet attain'd the skill to ring these compleat peals, *Sett-changes* are very proper for them, being easie and rung with little difficulty.

Colledge Grounds.

THE grounds of these *sett-changes* are of two kinds. First, placing of the bells *Fifths*, or secondly *Thirds*. To place them *fifths*; the 4 must hunt up behind the 7, the 3 behind the 6, and the 2 behind the 5. Or else the 5 may hunt down under the 2, the 6 under 3, and the 7 under 4. Or otherwise, first a *single*, then a *double*, and then a *triple* change to be made on the middlemost bells, all which are to one effect; for then the bells will lie *fifths* thus, 1 5. 2 6. 3 7. 4 8. Here are four *Concords* to be chiefly regarded in the peal

peal. The first is 1 5. the second 2 6. the third 3 7. and the fourth is 4 8. These four *Concords* may go the methods of any changes upon four bells; 1.5 being taken for the Treble, 2.6 for the Second, 3.7 for the Third, and 4.8 for the Fourth; and the *Concords* to change places with each other at pleasure. Wherein 'tis observable, that the two notes of every *Concord* must constantly attend each other in their motion; that is, whensoever one of the two notes moves, the other must follow it. For example: admit they were to go the *twenty four* changes, and that 1.5 were to hunt up over 2.6, 3.7, and 4.8. first therefore it must move up over 2.6, wherein it makes four changes: for first, the 5 moves up over the 2 thus, 12563748, the 1 must follow it thus, 2156.37.48. Then the 5 moves up over 6. 2165.37.48. the 1 follows it again 26.15.37.48; here the two *Concords* have made a change. In which manner also 1.5 must move up over 3.7. and 4.8. And in this manner are the *Concords* to move and change places with each other throughout the peal. Or secondly, to place the bells *thirds*, the 6 4 and 2 must hunt up, or else the 3 5 7 down; or otherwise a *triple*, a *double*, and a *single* change to be made on on the middlemost bells; all which are to one and the same

same effect, for then the bells will lie *thirds* thus, 1.3.5.7.2.4.6.8. Here are also four *Concords* principally to be regarded in the peal: the first is 1.3, the second 5.7, the third 2.4, and the fourth 6.8. These four *Concords* may also go the methods of any changes upon four bells, 1.3 being taken for the *treble*, 5.7 for the *second*, 2.4 for the *third*, and 6.8 for the *fourth*, and they must move in the same manner as before I have shewed. By these *Grounds* great variety of excellent and Musical changes are to be rung. If they go the *twenty four*, then the peal will consist of four times that number, that is, *ninety six* changes. But they may go only the first eight changes of the *twenty four*, and then the peal will consist of *thirty two*. Or else the first eight changes of a *twenty four* doubles and Singles, which will consist of *forty eight* if the double changes of the *twenty four* are singled, otherwise but *thirty two* as before. Any *Concord* may be made a *hunt*, and to move either up or down at the beginning: so that these *Grounds* afford great diversity. In the ringing of these *Sett-changes* the notes will lie sometimes *fifths*, sometimes *thirds*, and sometimes *thirds* and *fifths*, and then 'tis pleasant Musick to *Clam* them, that is, the two notes of each *Concord* to strike together; and

if

if they are *clam'd* true, the eight bells will strike as if they were but four, but with far greater harmony. They may *Clam* two or three bouts, and then strike open as many, and so alternately; or else they may *Clam* one pull, open the next, and so on. To reduce the notes of the *fifths* to their right places again at the conclusion of the peal, either 2 3 4 must hunt down, or else 7 6 5 up; or otherwise a *Triple double* and *single* change to be made on the middlemost bells, all which are to one effect, and will bring the bells round. To reduce the *thirds*, either move down 2 4 6 into their places, or else move up 7 5 3 into theirs; or otherwise make a *single, double, and triple* change on the middlemost bells; all which are to one effect, and will bring the bells again round.

The methods of all peals upon *six* bells may be prick't upon *eight*, observing but proportion in the changes, according to the difference in the number of bells, *viz.* *Triples* and *doubles* upon *six* must be *quadruples* and *triples* upon *eight*. *Doubles* upon *six* must be *Triples* upon *eight*, &c.

Bob Major.

Plain Quadruples and Triples. All the bells have a direct hunting course until the Treble leads, and then the six hindmost bells dodg. By this method it will go 112. And by making of *bobs* it will go 224, 336, or 672. The *bob* is a triple change at the leading of the Treble, wherein the bell in the 4th place lieth still.

To ring 224. Every time the *half-hunt* dodgeth behind, a *bob* must then be made.

To ring 336. Every time the *half* and *quarter-hunts* dodg together behind, a *bob* must then be made.

To ring 672. Every time the *half-hunt* dodgeth behind, a *bob* must then be made, except when the *quarter-hunt* dodgeth there with it, and then not. The 2 may be the *half-hunt*, and 4 the *quarter-hunt*, or others at pleasure.

By making of two *extreams* it will go 1344, and with four *extreams* it will go 2688.

All

12345678
21436587
24163857
42618375
46281735
64827153
68472513
86745231
87654321
78563412
75836142
57381624
53718264
35172846
31527486
13254768
13527486

All peals upon *six* bells wherein half the changes are *triples*, will go upon *eight* according to the method before prickt, but after this manner. If it is a peal upon *six*; which consists of 360 or 720 changes, then in the ringing of it upon *eight* there must be five *hunts*. The Treble may be the first *hunt*; 2 the second &c. Now the method of the peal must go on according to that before prickt until the Treble leads, and the 2 lie next it, and then two of the changes upon *six* are always made, the six hind bells making them: the first is always a *triple* change brought in by the course of the bells thus, 12436587, and the second either *double* or *single* according to the method upon *six*; and the *third fourth* and *fifth Hunts* in eight, are the *whole half* and *quarter-hunts* in the changes upon *six*. By this method it will go 40320 compleat, but then every 112th change will be a *double*, and sometimes *single* in some peals. The bells may be brought round at 672 in some peals, but in others not till 1344.

Colledge

Colledge Bob-Major.

Quadruples and Triples. The first hath single dodging behind; the second single dodging before and behind; the third

The first.	The second.	The third.	The fourth.
12345678	12345678	12345678	12345678
21436587	21436587	21436587	21436587
24163578	24163578	24135678	24135678
42615387	42615387	42316587	42316587
46251378	24651378	43261578	24361578
64523187	42563187	34625187	42635187
65432817	24536817	36452817	24365817
56348271	42358671	63548271	42638571
53684721	24385761	65384721	24368751
35867412	42837516	56837412	42637815
38576142	24873156	58673142	24367185
83751624	42781365	85761324	42631758
87315642	24718356	87516342	24613785
78136524	42173865	78153624	42167358
71863542	41237856	71856342	41263785
17685342	14328765	17583624	14627358
16758342	13482756	15786342	16423785

double dodging behind; and the fourth double dodging before and behind. It may also be prickt a fifth way, viz. with single dodging before, and double dodging behind. And likewise a sixth way, viz. with doubled dodg-

dodging before, and single dodging behind. The dodging is without intermission except when Treble hindreth, and also betwixt two bells until Treble parts them. By this method each of them will go 112, and by making of *bobs* they will go 224, 336, or 672. The *bobs* are *triple* changes at the leadings of the Treble; in the *first second* and *sixth* the bell in the *4th* place lieth still at the *bobs*, and in the *third fourth* and *fifth* the bell in the *2d* place lieth still. The warning for the *bobs* is the same with that in *Bob-major* next before. And the *extreams* made as in that peal, 2 may be the *half* and 4 the *quarter-unit* in the four first, or others at pleasure.

Colledge Triples, dodging before and behind.

BY this method it 12345678 | 42587613
 will go 112, and 21435687 | 4578163
 by making of *bobs* it will 24153678 | 42571836
 go 224, 336, or 672. 42513687 | 24517863
 The *bob* is a *triple-change* 24531678 | 42157836
 at the leadings of the 42536187 | 41275863
 Treble, wherein the bell 24563817 | 14725836
 in the *4th* place lieth 42568371 | 17452863
 still. The warning for the *bobs* is the same
 with

with that in *Bob-major*, and the *extreams* also the same as in that peal. The 2 may be the *half-hunt*, and 4 the *quarter-hunt*, or others at pleasure.

The Wild-Goose Chase.

T *Ripples.* The fourth bell must first hunt up into the 7th place, and then the 4 and 8 continually dodg behind throughout the peal, except when the Treble hindreth them. The bell that moves up into the 6th place when the Treble moves down from thence, lieth still there until the Treble displaceth it; during which time the two hind bells dodg, and the five first go a perfect hunting course. And also when the Treble moves up out of the 5th place, the five first bells go a hunting course until it comes down there again. By this method it will go *eighty* changes, and by making of *bobs* it will go 160, 240, or 480. The

1 2 3 4 5 6 7 8

2 1 5 3 8 7 8 4

2 5 1 8 3 7 4 8

5 2 6 1 3 7 8 4

5 8 2 3 1 7 4 8

6 5 3 2 7 1 8 4

6 3 5 7 2 8 1 4

3 6 7 5 1 8 4 1

3 6 2 5 4 8 1

7 3 2 6 5 4 1 8

7 2 5 5 6 1 4 8

2 7 5 3 1 6 8 4

2 5 7 1 3 6 4 8

5 2 1 7 3 6 8 4

5 1 2 3 7 6 4 8

1 5 3 2 7 8 9 4

1 3 5 7 2 8 4 8

3 1 7 5 1 8 8 4

3 7 4 2 5 8 4 8

7 3 2 1 5 8 8 4

7 2 3 5 1 6 4 8

bob is a *triple* change at the leading of the Treble, wherein the bell in the 4th place lieth still.

To ring 160. Every time the *half-hunt* maketh a change in the 2^d and 3^d places, a *bob* must at the same time be made.

To ring 240. Every time the *half* and *quarter-hunts* make a change together in the second and third places, a *bob* must then be made.

To ring 480. Every time the *half-hunt* maketh a change in the second and third places, a *bob* must then be made, except when the *quarter-hunt* makes a change there with it, and then not. The 2 may be the *half-hunt*, and 6 the *quarter-hunt*, or others at pleasure.

Colledge Triples, dodging behind.

THE method of ringing this peal is the same in all respects with that next before, with this only difference. Every time the *whole-hunt* leads, the *triple* change is here made on the six middle bells, which parts the two hind-bells, and so introduceth them by degrees into the body of the peal. By this method it will go 112, and by making of *bobs* it will go 224, 336, or 672. The *bob* is a *triple*

triple change at the leading of the Treble, wherein the bell in the 6th place lieth still. The warning for the bobs in the 224 is the same with that in the 160 next before. In the 336 'tis the same with that in the 240 next before. And in the 672 'tis the same with that in the 480 next before. 2 may be the *half-hunt* and 5 the *quarter-hunt*, or others at pleasure.

12345678	62345178
21435687	26431587
24153678	24613578
42513687	42163587
45231678	41236578
54326187	14326587
53462817	13462857
35642871	31642875
36524781	36124857
63254718	63214875

The Grand Experiment.

Quadruples and Triples. The Treble is the *whole-hunt*, but never hunteth up further than the sixth place; for the six first bells go *triples* and *doubles*; it matters not of what sort, provided that the *double* changes at the leadings of the Treble are always made on the four hindmost of the six bells; which course of *triples* and *doubles* must be continued, the two hindmost of the eight bells in the mean time dodging until the first *Parting* change is made, which will separate the two hindmost bells; and then the six first bells go

the same course of *triples* and *doubles* again, the two hindmost bells in the mean time dodging as before, until the second *Parting* change is made, and so successively. The *Parting* change is a *triple* change on the six middle bells, and made at the leadings of the *whole-bunt*. The first *Parting* change may be made either at the first second third fourth or fifth leading of the Treble; observing, that whatsoever bell in the first *Parting* change moves down to the Treble, when the Treble leads and that bell lieth next it again, the second *Parting* change must then be made. And again, whatsoever bell in the second *Parting* change moves down to the Treble, when the Treble leads and that bell lieth next it again, the third *Parting* change must then be made, and so successively; there being seven *Parting* changes in the peal, and as many *half-bunts*, each of the seven bells taking that place one after another. So that the seven persons that ring the 2^d, 3^d, 4th, 5th, 6th, and 7th bells, must call the *Parting* changes one after another, according as the afore^{sa}id rule directs them: or else he that rings the Treble may do it, but not so well as the rest. To ring it with such peals upon six bells which consist of single courses, it will go 420; with double courses 840. This peal may also be rung *triples*, that

that is, the six first bells to go *doubles*, the two hind bells in the mean time dodging, and the *Parting* changes to be made as before. But in ringing it with such Peals of *Triples* and *Doubles*, or else *Doubles* upon six bells, where the *double* change at every leading of the Treble is made in the 2^d 3^d 5th and 6th places, there, whatsoever two bells lie next the Treble at the first *Parting* change, the same two bells will lie next it at every *Parting* change, which will be a rule for calling them, there being only five *Parting* changes in it, which are *triples* as before. The first *Parting* change may also here be made either the first second third fourth or fifth time the Treble leads. If it is rung with peals upon six bells, consisting of single Courses, it will then go 300, with double Courses 600. This peal may also be rung by *Concatenating* of divers kinds of methods. For as the peal consists of several parts, viz. from one *Parting* change to the next, being accounted a compleat part; so each part may be rung by a different method from the rest. For any peals upon six bells, whether *doubles*, or *triples* and *doubles*, consisting either of single or double Courses, may indifferently be rung together in this peal, succeeding each other in the several parts of it, and at every *Parting* change a new

method to Begin. Or else any two of them to succeed each other alternately throughout the parts of the peal, or more or less at pleasure. But still observing, that all that are rung together in one peal must be such, where the *doubles* at the leadings of the Treble are made on the four hindmost of the six bells; or else all of them such, where the *doubles* at the leadings of the Treble are made in the second and third, and the fifth and sixth places. If they are of the first kind, then there will be seven *Parting* changes in the peal, and as many *half-hunts*; and the *half-hunts* must successively call the *Parting* changes as before I have shewed: if of the later kind, then but five *Parting* changes, which must be call'd by the same rule as before I have shewed in ringing it with one peal of this kind. And also observing, if the first *Parting* change is made at the first second third or fourth leading of the Treble, then whatsoever method it goes at first, it must also go the same again after the last *Parting* change is made. But in ringing it with peals of the first kind, the second being made the first *half-hunt*, and to call the first *Parting* change; and with peals of the later, the 3^d likewise: then the last *Parting* change in either of them will conclude the peal.

This

This peal may go the method of the *Experiment* upon six bells, page 162, that is, the four first bells to go the *Twenty four Doubles* and *Singles* as in that peal; and the four hindmost bells in the mean time to dodg double. The *Parting* changes are *triples* on the middle bells, and the same rules observed in making and calling them, as in that peal: but here are seven of them in this, and 168 changes.

The *Experiment* upon six may also be rung *Comprehensively* herein. The six first bells to go that compleat peal, the two hindmost of the eight bells in the mean time dodging; and every time the 3^d bell comes to call the *Parting* change on six, then instead of it a *Grand* change must be made, that is, a *triple* on the six middle bells: and then the six first bells to go the compleat peal again, the two hindmost bells in the mean time dodging as before, untill the third bell calls another *Grand* change, and so successively; there being three of them in the peal, and 360 changes. If the bells are placed 23567148 at the beginning, the 4.8 will dodg behind the first *six score* of it, 4.1 the second, and 1.8 the third, and then the 5th may call the *Grand* changes in the place of the 3^d; or any other three bells may be laid behind at first, for the

fake of Musical dodging. The first *Grand* change may be made either at the first second third fourth or fifth *Parting* change, observing, that whatsoever bell at the first *Grand* change should then in course have call'd a *Parting* change, every time that bell comes to call a *Parting* change, it must call a *Grand* change in the place of it: or else any one of the six first bells (the *whole-hunt* excepted) may be appointed beforehand to attend the calling of the *Grand* changes, observing, that every time that bell comes to call a *Parting* change, a *Grand* change must be call'd in the place of it.

Imperial Bob.

Q*uadruples and Triples..* The Treble hath a dodging course. The two first and two last bells always dodg until the Treble hindreth them, and in the mean time the two next bells to those dodging bells do lie still one change, dodg the next, and so by turns until the Treble also hindreth them. And the two bells in the fifth and sixth places whilst the Treble is behind, and those in the 3^d and 4th places when 'tis before dodg, until Treble likewise hindreth them. By this me.

method it will go 224, and by making of *bobs* it will go 448, 672, or 1344. The *bob* is a triple change at the leading of the Treble; wherein the bell in the fourth place lieth still.

12345678	42361875	16847253	14283675
21436587	24368157	16482735	—
12346578	42631865	—	18645273
21435687	24613857	18765432	18462537
24136578	42168375	<i>bob</i>	—
42315687	24618357	17864523	16587432
24135678	42163875	—	<i>bob</i>
42316587	41268357	16573824	15684723
24361578	14623875	<i>bob</i>	—
42635187	41263857	15678342	18753624
24631578	14628375	—	<i>bob</i>
42365187	14263857	17352648	17856342
24635817	41628375	17536284	—
42368571	14268357	—	15372846
24365817	41623875	13274586	15738264
42638571	46128357	13725468	—
24365871	64213875	—	13254768
42638517	46123857	12438765	13527486
24635871	64218375	12347856	—
42368517	46281357	—	12436587
24638157	<i>Ec.</i>	14826357	12345678

To ring 448. Every time the *half-hunt* dodgeth behind a *bob* must then be made, as in this here prickt, where 2 is the *half-hunt*.

To ring 672. Every time the *half* and *quarter-hunts* dodg together behind, a *bob* must then be made.

To

To ring 1344- Every time the *half-hunt* dodgeth behind a *bob* must then be made, except when the *quarter-hunt* dodgeth there with it, and then not. The 2 and 4 may be the *half* and *quarter-hunts*, others at pleasure.

NOTTINGHAM Peals.

Nottingham Mixt Peal.

1. 6. 2.

THE Changes are plain *Trebles* and *Doubles* until the Treble leads, and then a *single* change is always made. The Peal called *Old Doubles and Singles* upon five bells is the ground of this Peal, every *single* in this peal being the *single* in that. For as in that peal the *whole-hunt* is one of the two bells that make every *single*; so likewise in this, the 6 being the *half-hunt*, is one of the two bells that makes every *single* change herein, except when it lieth next the *whole-hunt*, and then the *single* is behind; but when 2 lieth

123456
214365
241635
426153
462513
645231
654321
563412
536142
351624
315264
132546
132564

2 lieth also next the 6, then *extream* in the fourth and fifth places.

Nottingham Trebles and Doubles.

1. 2. 3.

THE ordinary course is to move directly, except when the *whole-hunt* passes either out of or into the *second's* place, and then constantly dodg behind. There are single and double *bobs*; the *bob* is a double change at the leading of the Treble, wherein the bell in the 4th place lieth still. When the third *hunt* dodges behind, the second *hunt* then leading, is a warning for the single *bob* to be made at the next leading of the Treble. And when the second and third *hunts* dodg together behind, is a warning for the double *bob* to be made at the two next leadings of the Treble. The two *extreams* in the 720 must be made according to the general rule in the *Introduction*, p. 90.

123456
214365
241356
423165
432615
346251
364521
635412
653142
561324
516342
153624
135264
312546
321564

Not-

Nottingham Single Bob.

1. 5. 2.

ONE time the Treble hunts quite up, the next time only up into the fourth place, and so by turns, as in the example here prickt. The bells observe the course of the Treble, and also dodg it being before; and once in 120 changes *bob*, when that bell which is nominated for the second *hunt* lying behind twice, meets with the third *hunt* when the first *hunt* is going to lead. The second and third *hunts* are both one.

The first *single*,

124365

124356

The second *single*.

123465

123456

123456	341265
214365	314625
241635	136452
426153	606
462513	163425
645231	614352
654213	641532
562431	1465123
526413	456132
254631	541623
245361	514263
423516	152436
432156	154263

Nottingham Bob.

1 and 2.

THE Treble hath a dodging course, and every time it leads, the *double* is on the four

four middle hells, except the *bobs* which are made in the 2d and 3d, and the 5th and 6th places. The *bobs* are single and double. When the *whole-hunt* leads and the *half-hunt* lieth behind, is a warning for a double *bob* to be made at the two next leadings of the Treble, there being but three changes betwixt the two *bobs*. And when the *half-hunt* lieth in the first and second places for twenty changes together, is a warning for a single *bob* to be made the second time the Treble leads. The *extreams* must be made according to the general rule in the *Introduction*, page 90.

123456	523614	12635	562314	162453
214365	526341	146253	653241	126543
241635	253614	<i>bob</i>	635421	215634
426153	235164	164235	364512	216543
421635	321546	612453	365421	125634
246153	325164	621543	634512	152364
264513	231546	265134	643152	513246
625431	213456	261543	461325	
624513	124365	625134	463152	
265431	142635	652314	641325	
156341	416253	563241	614235	

Red-

T

Redding Bob.

THE Treble hath a dodging course, and when it moves up out of the 2^d place the two first bells dodg until it comes there again; and when it moves down out of the 5th place, the two hind bells dodg until it comes there again, except only whilst it dodgeth in the 3^d and 4th places, and then the two hind bells lie still. When the Treble lieth behind the *double* is on the four first bells; and when it leadeth on the four last. By this method it will go 120, and by making of *bobs* it will go 240, 360, or 720. At the *bobs* the bell in the 4th place lieth still. The rule of calling the *bobs* is the same with that in the *Colledge Bobs*, page 162.

123456	324516
214365	234561
124356	325416
213465	235146
231456	321564
324165	235164
231465	321546
324156	312564
234516	135246
325461	315264
235416	132546
324561	135264
235461	

Redding Bob according to the Cambridge way.

THis is the same with the former, excepting only the *double* changes which are made

Redding Bob.

191

made when the Treble dodgeth in the 3^d and 4th places, both in hunting up and down; which are here made on the four hind bells, whereas in that they were made on the four first bells: so that here the two hind bells dodg without intermission until the Treble hindreth them. This will also go 240, 360, and 720, and the bobs made by the same rule as the former.

123456
214365
124356
213465
231456
324165
321456

231654
236145
321654
312645
136254
316245
132654
136245

Fif

Fifteen OXFORD Peals.

Adventure. 1 and 2.

Doubles and singles. Every bell leads four times. The Treble hath a dodging course; and is one of the two bells which makes every single change except when it leads, and then 'tis made in the 3d and 4th places; but when the 2lieth next it, an *extream* behind.

Camelion. 1 and 2.

Every time the Treble hunts up and down, it makes a single in the third and fourth

4th places, and when it leads the *single* is there also; but when 2 lies next it, then an *extream* behind. Every bell except the Treble leads four times.

12345	45213
21354	45123
23145	41532
23415	14523
24351	14251
42531	

Medley. I and 5.

Doubles and Singles. The Treble leads four times, lieth behind as many, and twice in every other place. Every other bell leads four times. Every *single* is made behind, except when the Treble is either in the fourth or fifth places, and then in the second and third places. Every time the Treble goeth to lead and leaves leading, the *double* is on the two first and two last bells, except when the Treble goeth to lead if the 5th gives it place, and then the *double* is made on the four first bells.

12345	54132
21354	54123
21345	51432
23154	51423
23145	15243
32415	15234
34215	12543
32451	12534
34251	
43521	14352
45321	14325
43512	13452
45312	13425

Oxford Paradox. 1 and 5.

Doubles and singles. Every bell leads four times, and lieth behind as many. Every single is made in the third and fourth places until the Treble leads, and then in the second and third places: but when the Treble leads and the fifth lieth behind, then the *extream* in the third and fourth places.

12345	54312
21435	54132
21345	45312
23154	45132
23514	41532
32154	41232
32514	14532
35241	15432
35421	14532
53241	15432
53421	

Halliwell. 1 and 2.

Treble leads four times, lies behind as many, and twice in every other place. When it leaves the two hind bells, they dodg until it comes there again, except when it leads and 2 lies next it, for then an *extream* is made in the third and fourth places.

12345	54312
21354	45312
21345	54132
23154	54132
23145	51432
32415	51432
23415	15432
32451	15432
34251	14532
43521	14532
45321	—

Oxford Sixscore.

THE Treble hath a direct hunting course, as in plain changes; and the changes are all *single* except when the Treble lieth behind, and then a *double* is made on the four first bells; and when it leads, the *single* is in the third and fourth places, but when 2 lieth next it an *extream* behind.

12345	32514
21345	32154
23145	31254
23415	13254
23451	13524
32541	

Fortune. 1 and 2,

D*oubles.* The Treble is a perfect hunt, and when it leaves the two hind bells they dodg until it comes there again. Every bell leads twice, and then hunts directly up, unless the aforesaid dodging hindreth them. Every time the Treble leads, a *single* is made behind, except when 2 lieth next it, and then an *extream* in the third and fourth places.

12345	13254
21354	—
23145	14523
32415	14532
34251	—
43521	12354
45312	<i>Ext.</i>
54132	12534
51423	—
15432	14352
15423	14325
13245	<i>Ec.</i>

Oxford Single Bob.

Triples, Doubles, and Singles.

1. 2. and 3.

THE Treble hath a direct hunting course; and when it leaves the two hind bells they dodg until it comes there again. Every bell leads twice, and then hunts directly up, unless the afore-said dodging hindreth them. When the Treble leads, the *double* is on the four hind bells. By this method it will go *sixty* changes, and by making of *singles* it will go 120, 240, 360, or 720. The *singles* in the 120, 240, and 720, must be made by the same method with those in *Old Triples and Doubles*, page 109. And to ring 360, every time the 1. 2 lie together before, the *single* must be made behind; and when 1.2.3 lie together there, then the *single* in the fourth and fifth places.

123456
 214365
 241356
 423165
 432615
 346251
 364521
 635412
 653142
 561324
 516342
 153624
 156342
 513624
 531642
 356124
 365214

Oxford Double Bob.

Triples, Doubles, and Singles.

When the Treble leaves the two first bells, they dodg until it comes there again; but in all other respects 'tis the same with the former. And the *singles* in the 120, 240, 360, and 720, to be made as in that Peal,

123456	246135
214365	421653
241356	412635
423165	146253
243615	142635
426351	416253
243651	461235
426315	

Oxford Single Bob.

THE method of this Peal is the same in all respects with *Oxford Single Bob, Triples Doubles and Singles*, excepting the *bobs* in this peal, which are made in stead of the *singles* in that. By making of *bobs* it will go 180 or 360. The *bob* is a *double* change at the leading of the Treble, wherein the bell in the fourth place lieth still.

To ring 180, there must be a *whole* and *half-hunt*; and when the *whole-hunt* is before and the *half-hunt* behind, the next change is to be a *bob*.

To

To ring 360, there must be a *whole*, *half*, and *quarter-hunt*, viz.

First, when the *whole-hunt* comes to lead, and the *half-hunt* to fall behind, the next change is a *bob*: and

Secondly, when the *whole-hunt* leads before the *quarter-hunt*, and the *half-hunt* is in the fifth place, the next change is also a *bob*.

The 1 and 5 may be the *whole* and *half-hunts* in the 180, and 1.5.3 the *whole*, *half*, and *quarter-hunts* in the 360, or others at pleasure.

Oxford Double Bob.

THE method of this peal is the same in all respects with *Oxford double Bob* before, excepting the *bobs* in this peal, which are made instead of the *singles* in that. The *bobs* are here made in the same manner, and call'd by the same rule in the 180 and 360, as in *Oxford single Bob* next before; and the two *extreams* in the 720, both in this and the last peal, must be made according to the general rule in the *Introduction*.

Or.

Oxford Triple Bob.

THE Treble is the *whole-hunt*, and hath a dodging course. When it leaves the two hind bells, they dodg until it leads, and then a *double* is made on the four middle bells, which parts the two hind bells; but then the two hind bells dodg again until the Treble displaceth them. Every bell leads twice (except when the Treble dodgeth there) and as they hunt up and down do make a dodg in the third and 4th places. When the Treble moves up from dodging before, the bell that dodged there with it continues in the first and 2^d places, lying twice together in each, until the Treble comes down to dodg there with it again. By this method it will go 120, and by making of *bobs* it will go 360. At the *bobs* the bell in the fourth place lieth still. The warning for them is this, When the *half-hunt* leads, and the Treble moves down, and dodgeth there with it,

123456
214365
124356
213465
231456
324165
321456
234165
243615
426351
423615
246351
264531
625413
624531
265413
256143
521634
526143
251634
215643
126534
216543
125634
152364
513246
153264
512346
521364

a *bob* must then be made at that leading of the Treble. The 3 may be the *half-hunt*, or any other.

Oxford Triple Bob, the second way.

THis peal is in all respects the same with that next before, except the *double* change which is made when the Treble moves up out of the second place, and also down into that place again, which is here made on the four middle bells, and consequently parts the two hind bells, which in the former peal continued dodging together. This will also go 3 60, the *bobs* being made in the same manner, and also the warning for them the same, as in the former peal.

123456	254613
214365	245163
124356	421536
213465	425163
231645	241536
326154	214356
321645	123465
236154	213456
263514	124365
625341	142635
623514	416253
265341	146235
256431	412653
524613	421563
526431	245136

Oxford Riddle, or the Hermaphrodite.

TReble is the *whole-hunt*; whilst 'tis hunting up the two last bells dodg, and whilst 'tis

'tis hunting down the two first. Every time it leads and lieth behind, the *double* is made on the four farthest bells from it. Every bell leads twice and lieth behind twice, except the dodging hinder. By this method it will go *sixty* changes *triples* and *doubles*, and then by making of *singles* as in *Old triples* and *doubles*, it will go 120, 240, or 720.

123456	341652
214365	314562
241356	135426
423165	134562
432615	315426
346251	351462
432651	534126
346215	513216
436125	

My Lord. 144.

D*oubles.* Treble is a perfect Hunt. Every bell leads twice, and then moves up into the third place where it lieth twice, and then moves down again except the motion of the Treble hindreth. When the Treble goeth to lead and leaves leading, the *double* is on the two first and two last bells; and when it leadeth, 'tis on the four middle bells. But when it leadeth, and the 6 lieth behind, then a *single* in the third and fourth places.

If a *double* be made on the four hind bells, at every third leading of the

123456
213465
231456
324156
342516
432501
423651
243615
234165
321465
312456
132465
123645

the Treble it will go 180 compleat *doubles*, and then by making of two *singles* it will go 360, or with four *singles* 720.

Seventeen Peals composed at CAMBRIDGE, by Mr. S.S.

My Honey. 1 and 2.

In this peal there is a *whole-hunt* and an *half-hunt*. The *whole-hunt* *hath* always four times before, and four times behind, and twice in every other place. The two hindmost bells always *dog* 'till the *whole-hunt* *hindreth*, except when the *whole-hunt* is before, at which time there are four changes made of a four and twenty *doubles* and *singles*; the first of which is a double change brought in by

12345	31254	54321
21354	31245	45231
21345	13254	54231
23154	—	45213
23145	13524	54213
32415	15342	45123
23415	—	45132
32451	15432	41523
23451	51423	41532
32541	51432	14523
23541	54123	—
32514	54132	14253
23514	45312	12435
32154	54312	—
32145	45321	12453

the

the course of the bells (as in the following peal appeareth) 13254; the second is a *single* in the third and fourth places (13524); the third is a *double* on the four last (15342), and the fourth a *single* again in the third and fourth places (15432), except when the *half-hunt* is with the *whole-hunt* before, then it is to be an *extream* behind. When the *whole-hunt* leaves the *third's* place hunting up, the two formost bells dodg till it returns into the same place again.

The Whirligigge. 1 and 5.

IN this peal, first the bells dodg behind (and not before) till the *whole-hunt* hindreth them; and the next course they dodg in like manner before (and not behind) till the *whole-hunt* hindreth them; and so by turns throughout the whole peal. When the *whole-hunt* is before, if the bells were dodging behind before it came to lead, *single* behind; if they were dodging before, *single* in *second's* and *third's* place; and when the *whole-hunt* leads, and *half-hunt* is in *Tenor's* place, there is always an *extream* to be made in 3^d and 4th place, which is every fourth time the *whole-hunt* leads.

21354	51243	31245	41352
23145	52134	32154	43125
32415	25314	23514	34215
34251	52341	25341	43251
43521	25431	52431	34521
45312	52413	54213	43512
54132	25143	45123	34152
51423	21534	41532	31415
15432	12354	14523	12245
15423	13254	14532	13425

Jack-on-both-sides. 1 and 5.

IN this peal the bells always dodg both before and behind, till the whole-hunt hindredth them; except when both the Hunts

21354	45132	52143	32514	23451	53421
23145	54312	25413	23541	32541	35412
32415	45321	52431	32451	23514	53142
34251	54231	25341	34215	32154	51324
43521	45213	52314	43125	31245	15234
34512	54123	25134	41352	13254	—
43152	51432	21543	14325	13524	15243
41325	15342	12534	14235	31542	51423
14352	—	12354	41253	35124	—
14532	15324	21345	42135	53214	—
41523	51234	23154	24315	35241	—

are together either before or behind; for then

then the two farthest bells from the Hunts do leave dodging for the next change onely which is always a *double* made by the two Hunts and the two next bells to them. The *singles* and *extreams* are made as in the *Old Doubles*.

Winwick Doubles. 1 and 3.

In this peal, first, the two hindmost bells dodg till the *whole-hunt* dindreth them, till the first *single* is made: and then the two foremost bells dodg 'till the *whole-hunt* hindreth them, until there be made another *single*, and so they continually dodg successively throughout the whole peal. There are six *singles* which are made in the same manner as *St. Dunstan's Doubles*, page 127.

21354	41532	31254	41523
23145	45123	32145	45132
32415	54213	23415	54312
34251	52431	32451	45321
43521	25341	23541	54231
45312	23514	32514	45213
54132	32154	23154	54123
51423	31245	21345	51432
15432	13254	12435	15342
14523	— —	14253	— —
	13524		15324

None.

Non-such. 1 and 2.

IN this peal the bells always dodg both be hind and before till the *whole-hunt* hindreth them, except when both the Hunts are together either behind or before: for then the bells omit dodging for the next change as in *Jack-on-both-sides*. There are four *figures* which are all made in the 3^d and 4th places every third time that the *whole-hunt* leads.

21435	25134	32415	53214	54231	34521
24153	52314	23451	35241	45321	35411
42513	25341	32541	53421	43512	53143
24531	52431	23514	54312	34152	51324
42351	25413	32154	45132	31425	15342
24315	52143	31245	41523	13452	
42195	51234	13254	14532	14325	15432
41253	15243	—	15423	41352	
14235	12534	13524	51432	43125	
12453	21354	31542	54123	34215	
21543	23145	35124	45213	43251	

Cambridg Delight. 2 and 4.

IN this peal the two hindmost bells always dodg till the *whole-hunt* hinders them. When the *whole-hunt* leaves the *thirds* place hunt-

hunting up, the two foremost bells dodg till the *half-hunt* hinders them, whose course is the same with the course of the *half-hunt* in *Grandfire*. There are two *singles* which are made by the same rule as in *Grandfire*.

13254	15243	14235	45231
31524	12534	41325	42513
13542	21543	43152	24531
31452	25134	34512	25413
34125	52143	35421	52431
43215	51234	53241	54213
42351	15324	52314	45123
24315	51342	25341	41532
23451	15432	23514	14352
32415	14523	32541	13425
34251	41253	35214	31245
43521	42135	53124	32154
45212	24153	35142	23145
54132	21435	53412	—
51423	12453	54321	23154

Cambridg Delight, another way.

I and 4.

IN this peal the two hindmost bells always dodg till the *whole-hunt* hinders, as in the former Peal. When the *half-hunt* leaves the 3d place hunting up, the two foremost bells dodg

dodg till the *whole-hunt* hinders. It differeth from the former peal in this; That whereas in that the bells always begin to dodg before when the *whole-hunt* leaves *third's* place, and are parted by the *half-hunt*; in this they begin to dodg before when the *half-hunt* leaves the *third's* place, and are parted as well before as behind by the *whole-hunt*. It differeth also, in that the *half-hunt* in this peal always bobbeth behind on the contrary stroke to what it doth in the former peal; there are two *singles*, which are made as in the former peal.

21354	51234	31524
23145	52143	35142
32415	25413	53412
34251	24531	54321
43521	42351	45231
45312	43215	42513
54132	34125	24153
51423	31452	21435
15432	13425	12453
14523	14352	14235
41532	41325	41253
45123	43152	42135
54213	34512	24315
52431	35421	23451
25341	53241	32541
52314	35214	23514
25134	53124	32154
21543	51342	31245
12534	15324	13254
15243	13542	13245

The Dream, upon five bells. I and 2.

IN this peal the two hindmost bells always dodg till the *whole-hunt* hinders, except when the two Hunts are together before. Or it may be rang by making the two foremost bells

bells dodg always, except the Hunts be together behind. There are six single changes which are all behind every other time the *whole-hunt* leads, the *half-hunt* at every single lying either in the 2d or 3ds places.

21435	51342	41235	53142
24153	53124	42153	35412
42513	35214	24513	34521
45231	32541	25431	43251
54321	23451	52341	42315
53412	24315	53214	24135
35142	42135	35124	21453
31524	41253	31542	12543
13542	14235	13524	—
15324	—	15342	12534
14253	51324	—	&c.

The Contention upon five bells.

1 and 2.

IN this peal the two hindmost bells dodg as in the former peal till the Hunts are together before for twenty changes; and then for the next twenty changes the two formost bells dodg, except the Hunts are together behind. There are six *singles* which are made as in the former peal.

21435	51342	41523	41235
24153	53124	45132	42153
42513	35214	54312	24513
45231	32541	53421	42531
54321	23451	35241	24351
53412	24315	53214	42315
35142	42135	35124	24135
31524	41253	31542	21453
13542	14235	13452	12543
15324	————	14325	————
	14253		12534
			Ec.

The Cheat. I and 3.

IN this peal the two hindmost bells always dodg 'till the *whole-hunt* hinders, and the two foremost bells dodg 'till either the *whole* or *half-hunt* hinders. Or on the contrary, the two foremost bells may dodg 'till the *whole-hunt* hinder, and the two hindmost 'till either the *whole-hunt* or *half-hunt* hinder. Or it may be rang a third way, by joining both these courses together, ringing twenty changes of it one way, and the next twenty changes the other way throughout the peal. There are six *singles* which are all made behind, every second time the *whole-hunt* leads; or at pleasure it may be rang with twelve *singles*, which are likewise all made behind.

Cambridg Peals.

211

21354	41532	31542	51243
23145	45123	35124	52134
32415	54213	53214	25314
34251	45231	52341	23541
43521	54321	25431	32451
45312	53412	52413	34215
54132	35142	25143	43125
51423	31524	21534	41352
15432	13542	12543	14325
14523	———	15234	———
	13524		14352 &c.

Topsie-turvie. 1 and 2.

21354	41532	31542	21453
23145	45123	35124	24135
32415	54213	53214	42315
34251	45231	35241	24351
43521	54321	53421	42531
45312	53412	35412	24513
54132	35142	53142	42153
51423	31524	51324	41235
15432	13542	15234	14325
14523	———	12543	———
	13524		14352
			&c.

P 2

Jumping

Jumping Doubles dodging before.

IN this peal every change is a jumping change (in which one bell leaps over two bells at once,) except when the Treble is either behind or before; for then there is always a plain *double* change made, or else a *single* at the end of each sixty changes. Treble

12345	31254	54132	24513	53241	43521
21534	23145	45213	42351	35421	34215
52143	32514	54321	24531	53214	43152
25314	23451	45231	42315	35142	31425
52431	32541	54312	24153	51324	13254
25341	23415	45123	41231	15432	—
52413	32154	51432	14352	14523	13245
25134	21345	15243	13425	41352	Gr.
51243	12453	12534	31542	34125	
15324	14235	21453	53124	43512	
13542	41523	42135	35412	34251	

is a perfect Hunt; the two foremost bells always dodg until the Treble hinder. When the Treble is hunting up, the jumping changes are all made by the bell in the Tenor's place, jumping into *third's*, except only that one when Treble goeth out of *second's* place into *third's*; for then the bell in the *3ds* place jumps into Trebles, where it dodgeth with the bell in the *2ds* place till Treble hinder.

der. When Treble is hunting down every jumping change is made by the bell in the 3^{ds} place jumping into Tenor's, except when it goeth out of *third's* place into *second's*, for then the bell in Treble's place jumps into 3^{ds}. And observe always, that when Treble is going to lead the first time, the bell in Tenor's place jumps into *third's*, and the next time the bell in the *third's* place into Tenor's throughout the peal. There are two *singles* which are made, as in *Grandfire*.

Jumping Doubles dodging behind.

IN this peal Treble is a perfect Hunt, as in the former. The two hindmost bells always dodg till Treble hinders. When Treble is hunting up the bell in the *third's* place always jumps into Treble's, excepting only when Treble goeth out of *third's* place into *fourth's*; for then the bell in Tenor's place jumps into 3^{ds}. And observe, that every second time the Treble goeth out of 4th into 5^{ths} place, the bell in Treble's place jumps into 3^{ds}; whereas at other times at the same change the bell in 3^{ds} place jumps into Treble's. When Treble leaves the 5^{ths} place hunting down, the bell in the 3^{ds} place

jumps into Treble's ; when she leaves 4ths place the bell in 3^ds place jumps into Tenor's. When she is either in the 2^d or 3^ds places hunting down, the bell in the Treble's place jumps into 3^ds. There are two *singles* made, as in the former Peal.

12345	31425	52143	24513	25341	34251
31254	43152	25314	45231	52431	23415
23145	34215	32541	54321	45213	32154
32514	42351	23451	35412	54132	21345
53241	24531	42315	53124	41523	13254
35421	52413	24153	31542	15432	—
43512	25134	41235	15324	14523	13245
34125	51243	12453	13542	51432	Gr.
41352	12534	14235	51324	45123	
13425	15243	21453	35142	54312	
14352	21534	42135	53214	43521	

Symphonic, upon six bells.

I. 2. and 3.

IN this peal are 720 changes, all *doubles* except twelve *singles*, which are made as in plain *Trebles and Doubles* on six bells. The two hindmost bells always *dodg* till the *whole-bunt* hinders them, except when a *single* is made in the 4th and 5th places. When the *whole-bunt* leaves the 4ths place hunting up, the two foremost bells *dodg* till it leaves the same

same place again hunting down: but it may be rang at pleasure to make the bells dodg perpetually before as well as behind, by making in every twelve changes two Trebles, one of them when the *whole-hunt* leaves the 3^d place hunting up, and the other when it leaves the 4th place hunting down; so that there will be in the whole peal Sixscore Treble-changes. When the *whole-hunt* is behind, the four fore-most bells dodg; when the *whole-hunt* is before, the four hindmost dodg.

213465	316254	615342	514623	412536
231456	361245	651324	541632	421563
234165	362154	653142	546123	425136
324615	632514	563412	456213	245316
234651	362541	653421	546231	425361
326451	635241	564321	452631	243561
236415	365214	654312	542613	423516
326145	635124	564132	452163	243156
321654	631542	561423	451236	241365
312645	613524	516432	415263	214356
132654	163542	156423	145236	124365
136245	165324	154632	142563	124635

Ec.

Grandfire upon Symphonie.

I. 2. and 6.

THis peal of *Symphonie* may be rang with but two single or two treble changes

at the end of either *Eightenscore*, by ringing it with single and double *bobs*, as in *Grandfire Bob*. The rule for calling the *bobs* in this peal is the very same as in *Grandfire Bob*, but when the *bob*-changes are to be made, the Hunts do not lie in the same order as in *Grandfire Bob*; for in this peal at a single *bob* the *whole-hunt* leads, the *half-hunt* is in the 5th place, and the *quarter-hunt* in the 4th place. And at the first *bob* of a double *bob* the *half-hunt* is in Tenor's place, and *quarter-hunt* in 2ds place; and at the later *bob* the

213465	316254	316542	316425	612354
231456	361245	361524	361452	621345
324165	632154	635142	634125	263154
234615	362514	365412	364215	623514
324651	632541	635421	634251	263541
236451	365241	364521	362451	625341
326415	635214	634512	632415	265314
236145	365124	364152	362145	625134
321654	631542	631425	631254	261543
312645	613524	613452	613245	216534
132654	163542	163425	163254	126543
136245	136524	136452	162345	125634 &c.

half-hunt is in the 5th place, and *quarter-hunt* in 2ds place, just contrary to what it is in *Grandfire Bob*. I have prickt this peal with two Treble changes in every twelve; so that if you make two Trebles more at the end of either *Eightenscore* (which must be made when

when the *whole-hunt* is going to lead just two changes sooner than if you should have made a *single*) there will then be in the whole 720 just Sixscore and two Treble changes.

Trebles and Doubles on six Bells with six Singles. 1. 2. and 3.

THis peal is taken ont of the *Dream upon five bells*. Every time the *whole-hunt* is before, there being two changes of that peal made in this. Every bell is a perfect

214365	321456	153462	164352
241635	234165	135426	—
426153	243615	153246	146532
462513	426351	152364	145623
645231	462531	125634	—
654321	645213	126543	154263
563412	654123	—	152436
536142	561432	162453	—
351624	516342	164235	125346
315264	153624	—	125364 <i>sing.</i>
132546	<i>bob.</i>	—	<i>Ec.</i>
135264	135642	146325	—
312546	—	<i>bob</i>	—

Hunt, when the *whole-hunt* is before dodg on the four hindmost, except the *half-hunt* be either in the 5th or Tenor's place, then always *bob* as in *Grandfire Bob*, except the

quar-

quarter-hunt lieth next to the *half-hunt*, for then it is always to be a *dodg*, on the four hindmost. Every other time that the *whole-hunt* and *half-hunt* come together before, there is a *single*, which is always made behind.

*A Twelvescore Trebles and Doubles.
upon Six Bells.*

IN this peal the four foremost bells go a four and twenty *Doubles* and *Singles*, observing

214365	234165	261453	156423
241356	324156	216435	165243
423165	231465	124653	— —
243156	213456	214635	615234
421365	124365	126453	165324
412356	142635	162435	— —
143265	416253	614253	163542
142356	461235	612435	136452
413265	642153	164253	— —
431256	641235	146235	316425
342165	462153	412653	136245
432156	426135	142563	— —
341265	241653	145236	132654
314256	421635	154326	123564
132465	246153	— —	— —
134256	264135	514362	213546
312465	621453	154632	123456
321456	624135	— —	— —

always, That for one Four and Twenty the bell

bell in the Treble's place is the hunting bell, and for the next the bell in the 4ths place throughout the peal, the two hindmost bells always dodging till the end of the Twenty Four; at which time there is a *double* made (if the bell in the Treble's place was the Hunt in the Twenty Four) on the four middlemost; but if the bell in the 4ths place was the hunting bell, the double is to be made in Treble and 2^d and 4th and 5th places.

Cambridg Bob.

THE Treble hath a constant dodging course; and when it leaves the two hind bells, they dodg until it comes there again, except when the Treble dodgeth before, and then they lie still. The two middle bells always dodg until the Treble comes there. When the Treble leaves dodging before, every bell leadstwicce, except when the Treble lieth still behind, and then the two first bells make a dodg. *Bobs* are made as in *Grandfire Bob*, and the warning for them the same also with that.

123456	325416
214365	352146
123465	531264
214356	532146
241365	351264
423156	315246
421365	132564
243156	315264
234516	132546
325461	135264
324516	312546
235461	135246
324561	312564
235416	321546
234561	3c.

Fourteen more Peals, composed at CAMBRIDG.

Doubles and Singles on five Bells.

The Parasite. 1 and 5.

IN this peal the Bells behind always dodg, except the Treble prevents them. When Treble is leaving the 3^{ds} place hunting up, the bells before dodg at whole pulls, if Tenor be not one of them, until it parts them. The course of the bells in hunting is the same with *Tendring*.

12345	35241	31524	42531
21354	35214	31542	42513
21345	53124	35124	24153
23154	53142	35142	24135
23145	51324	53412	21453
32415	51342	53421	21435
32451	15324	54312	2453
23415	15342	54321	12435
23451	13524	45231	14253
32541	13542	45213	14235
32514			Gr.

The

The Tulip. 1 and 2.

IN this peal Treble hunteth
 as in *Tendring*. When
 Treble is in *third's* place
 hunting up, the bells dodg
 before at whole-pulls, till
 it comes and parts them.
 When it is in *third's* place
 hunting down the bells be-
 hind always dodg, except it
 leadeth, till it parts them.
 When Treble is before there
 are four changes of twenty
 four *doubles* and *singles*; where-
 of the first is brought in by
 the hunting of the bells. All
 the *singles* in the Twenty four
 are made in the 3^d and
 4ths place, except 1-2 before, then *extream*
 behind.

21354	51423
21345	51432
23154	54123
23145	54132
32415	45312
32451	45321
23415	54312
23451	54321
32541	45231
32514	45213
23541	54231
23514	54213
32154	45123
32145	45132
31254	41523
31245	41532
13254	14523
13524	14253
15342	12435
15432	12453
	Ec.

The Honey-suckle. 1 and 2.

IN this peal every bell leads four times.
 While every bell but Treble is leading, the
 bells

bells behind always dodg: every 4th change is made by the four foremost bells. When Treble is leading there are four changes of Twenty four *doubles* and *singles* made as in the the former peal. The first change is on the four bells before.

21435	53421	51342	24351
21453	53412	51324	24315
24135	35142	53142	42135
24153	35124	53124	42153
42513	31542	35214	41235
42531	31524	35241	41253
45213	13254	32514	14523
45231	13524	32541	14253
54321	15342	23451	12435
54312	15432	23415	12453 &c.

Peals on 5 bells, with twelve Singles.

Blunderbus. 1--2.

IN this peal every bell is a Hunt. When Treble and 2^d are together either before or behind, the farthest bells from them dodg till either of them part, excepting the *extreams*. When the Treble is before a *single* in 3^d and 4th place, which is unmade the next time except 1--2; for then the Hunts being

being together before, the bells behind must dodg according to the rule forementioned.

21354	14325	13452	51234	23154
23145	41235	13542	15324	21345
32415	42153	31452	15234	12354
34251	24513	34125	51324	12534
43521	25431	43215	53142	---
34512	52341	42351	35412	21543
43152	53214	24531	53421	25134
41325	35124	25413	35241	Ec.
14235	31542	42143	32514	

Hudibras. I and 2.

IN this peal every bell is a Hunt. When Treble is before a *single* always in 3^d and 4th place which is unmade the next time, except it be 1—2, for then the bells behind dodg until Treble parts them.

21354	15423	14532	31245	25143
23145	51243	14352	13425	21534
32415	52134	41532	63245	12354
34251	25314	45123	31425	12534
43521	23541	54213	34152	---
45312	32451	52431	43512	21543
54132	34215	25341	45321	25134
51423	43125	23514	54231	Ec.
15243	41352	32154	52413	

Weston Doubles. 1 and 5.

IN this peal Treble is is a perfect Hunt. Every other time Treble is leaving the 3^d place hunting up, the bells before dodg till it comes and parts them: the bells behind dodg but when Treble hinders them, except the *extreams* which are in 3^d and 4ths place when it is 1—2 before; all the other *singles* are made behind when Treble is leading. It may be rang by making all the *singles* behind, by making the change before it is 1—2 on the bells before.

12345	13254	51432	45123	32514
21354	13245	15423	41532	23154
23145	31254	15432	14523	21345
32415	32145	51423	14532	12354
23451	23415	54132	41523	—
32541	24351	45312	45132	12534
23514	42531	54321	54312	Ec.
32154	45213	45231	53421	
31245	54123	54213	35241	

Peals on five bells with 10 Singles.

The Antelope.

IN this peal the bells hunt as in *Grandfire*. When Treble is before, a *single* is always made

made by the Tenor, and the bell which followeth it, except two *doubles* which are made as the *singles* in *Gransire*. It may be rang like *Cambridg delight* either way by observing the same method if like *Cambridg delight* the common way; and by making the *singles* by the *half-hunt* and the bell before it, if like *Cambridg delight* the other way.

21354	15243	34152	24531	53214	41253
23145	12543	31425	25413	52341	—
32415	21534	13452	52143	25431	15432
34251	25143	13425	51234	24513	14532
43521	52413	31452	15324	42153	—
45312	54131	34125	13524	41235	12354
54132	45321	43215	31542	14253	<i>Extr.</i>
51423	43512	42351	35124	14235	13245

The Maremaid.

IN this peal behind dodg twelve changes, excepting the sixth which is made on the bells before, and the twelfth which is a *single* in the 3^d and 4^{ths} places; and twelve changes before, excepting also the sixth, which is made by the bells behind, and the twelfth which is a *single* in 2^d and 3^d places. When they dodg behind, every odd change is on

Q

the

the last bells, and every even one a *bob*, excepting these two changes. When they dodg before, every odd change is a *bob*, and every even one on the four first bells, excepting likewise those two changes which are made according to the forementioned rule

The Checkquer. I and 5.

IN this peal the Treble is *whole-hunt*, and Tenor the *half-hunt* for twenty changes; and then Tenor the *whole-hunt* and treble the *half-hunt* for the next twenty, and so they hunt by turns throughout the peal. When Treble is the *whole-hunt* the bells behind always dodg, except it hinders them; and when Tenor is the *whole-hunt*, the bells before, except that hinders them; when Treble is before and Tenor dodging behind, a *single* made by the Tenor and the bell which dodged with it; when Tenor is behind and Treble dodging before, a *single* made by the Treble and the bell which dodgeth with that.

21354	31254
23145	13524
32415	15342
34251	51432
43521	54123
45312	45213
54132	42315
51423	24351
15432	42315
14523	24135
41532	42153
45123	24513
54213	25431
52431	52341
25341	53214
23514	35124
32154	31542
31245	13452
13254	31425
13245	13425

His peal may be rang by hunting the Treble and Tenor as before, and it differeth from it only in this;

when it is 1-5 behind in the hunting of the Treble, the bells before dodg till Tenor parts them; and when it is 1-5 before, in the hunting of the Tenor the bells behind dodg till Treble parts them: and then when Treble is the whole-hunt and Tenor half, it is plain *Cambridg delight* inverted. It may be rang by hunting the half-hunt, as in *Cambridg Delight* the other way, in either of those ways of ringing it, but then the single is always made by the hunting bell.

21354	12543
23145	21453
32415	24135
34251	42315
43521	43251
45312	34521
54132	35412
51423	53142
15432	35124
14523	53214
41532	35241
45123	53421
54213	54312
52431	45132
25341	41523
52314	34532
25134	15423
21543	51243
12534	15234
21534	15243
	Ec.

An example in that like *Cambridg Delight* the other way.

Q2

Gog-

Gogmagog. I. 5.

IN this peal the bells hunt as in *Grandfire*, and it differeth from it in this, That there is not every other time a single *bob*, but in stead of a single one every other time a double one: so that only once in four times there is a single *bob*; when Tenor is dodging behind there is always a *single* made by it, and the bell which dodgeth with it if Treble leadeth, otherwise not.

21354	34512	12543
23145	43152	21534
32415	41325	25143
34251	14352	52413
43521	—	54231
45312	14325	45321
54132	41352	43512
51423	43125	34152
15243	34215	31425
12534	32451	13452
21543	23541	—
25134	25314	13425
52314	52134	31452
53241	51243	34125
35421	15234	&c.

I — 4.

THIS peal may be rung like *Cambridg Delight*, if every other time the dodging before be omitted; or it may be rang by dodging constantly as in *Cambridg Delight*, by making double *bobs* and single *bobs* as in *Grandfire*: it may likewise be rang by making the course of the *half-hunt* in all the ways

ways of ringing it the same with *Cambridg delight the other way*; observing in all of them to make the *singles* as before directed.

An example of that like *Cambridg Delight the other way*, in which the dodging before is every other time omitted. 1-4.

21354	14523	12534	34152	25314
23145	41532	—	31425	52134
32415	45123	12543	13452	51243
34251	54213	21534	14325	15234
43521	52431	25143	41352	—
45312	25341	52413	43125	15243
54132	52314	54231	34215	51234
51423	25134	45321	32451	52143
15432	21543	43521	23541	—

Cambridg Marigold. 1. 2. and 3.

IN this peal are 720 changes, which are all *doubles* except 12 *singles* which are made as in Plain *trebles* and *doubles*. Treble is a perfect Hunt, and except the *dodges* (which are the same as in *Oxford double Bob*) every double change is made by the *treble* and the

Q₃

three

three next bells to it: observing always that the bell in *Tenor's* place lieth still 'till it giveth place to the *Treble*, or be removed by a *dodg* behind when the *Treble* is before. When *Treble* leaveth 3^ds place hunting up, the bell that then comes before, leads thrice, and likewise the next bell after it till *Treble* cometh back into 3^ds place again; at all other times every bell leads twice. The bell in *Tenor's* place lieth five times behind; (and when the *single* is made in the middle ten times) till *treble* remove it; and when *treble* comes back it lieth five times more behind, and then is displaced by a *dodg* behind and hunts down at whole-pulls. This peal may be rang by making *bobs* single and double as in *Grandsire Bob* with but two *singles* or two *trebles*, which must be made just Eighteen score changes one from the other.

The Nightingall. 1. 2. and 3.

IN this peal are 720 changes, which are all *doubles* except twelve *singles*, which are made as in the former peal; and if you ring *Grandsire Bob* upon it, there may be but two *singles*, or else two *trebles*, as in the *Mari-gold*. *Treble* is a perfect Hunt: the bells in 4th and

and 5th places dodg till *treble* parts them, and then the two foremost bells do the like for eight changes together till *treble* hinders them, and gives way to the other two bells to dodg again in the 4th and 5th places, which is always for three changes and no more, except when the *single* is made in that place, and then they dodg six times. When *treble* is behind, dodg the four first; when it is before on the four last, as in *Mari^gold*.

123456	356241
213546	536214
231456	356124
324156	531624
234516	513264
324561	153624
235461	156342
325416	— — —
235146	165432
321546	164523
312456	— — —
132546	146253
135264	142635
315624	— — —
351264	124365
532164	<i>sing.</i>
352614	124635
532641	— — —

F I N I S.
